VOLUME XLVI NUMBER TWO

THE NATIONAL GEOGRAPHIC MAGAZINE

AUGUST, 1924

CONTENTS

TWENTY-SIX ILLUSTRATIONS IN FULL COLOR

Discovering the Oldest Statues in the World
With 26 Illustrations — NORBERT CASTERET

Adventurous Sons of Cadiz
With 37 Illustrations — HARRIET CHALMERS ADAMS

Moorish Spain
26 Autochromes Lumière — GERVAIS COURTELLEMONT

From Granada to Gibraltar—a Tour of Southern Spain
With 23 Illustrations — HARRY A. McBRIDE

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IMMEDIATELY after the terrific eruption of the world's largest crater, Mt. Katmai, in Alaska, a National Geographic Society expedition was sent to make observations of this remarkable phenomenon. Four expeditions have followed and the extraordinary scientific data resultant given to the world. In this vicinity an eighth wonder of the world was discovered and explored—"The Valley of Ten Thousand Smokes," a vast area of steaming, spouting fissures. As a result of The Society's discoveries this area has been created a National Monument by proclamation of the President of the United States.

AT an expense of over $50,000 The Society sent a notable series of expeditions into Peru to investigate the traces of the Inca race. Their discoveries form a large share of our knowledge of a civilization waning when Pizarro first set foot in Peru.

THE Society also had the honor of subscribing a substantial sum to the expedition of Admiral Peary, who discovered the North Pole.

NOT long ago The Society granted $25,000, and in addition $75,000 was given by individual members to the Government when the congressional appropriation for the purchase was insufficient, and the finest of the giant sequoia trees of California were thereby saved for the American people.

THE Society is conducting extensive explorations and excavations in northwestern New Mexico, which was one of the most densely populated areas in North America before Columbus came, a region where prehistoric peoples lived in vast communal dwellings and whose customs, ceremonies, and name have been engulfed in an oblivion.

THE Society also is maintaining expeditions in the unknown area adjacent to the San Juan River in southeastern Utah, and in Yunnan, Kweichow, and Kansu, China—all regions virgin to scientific study.

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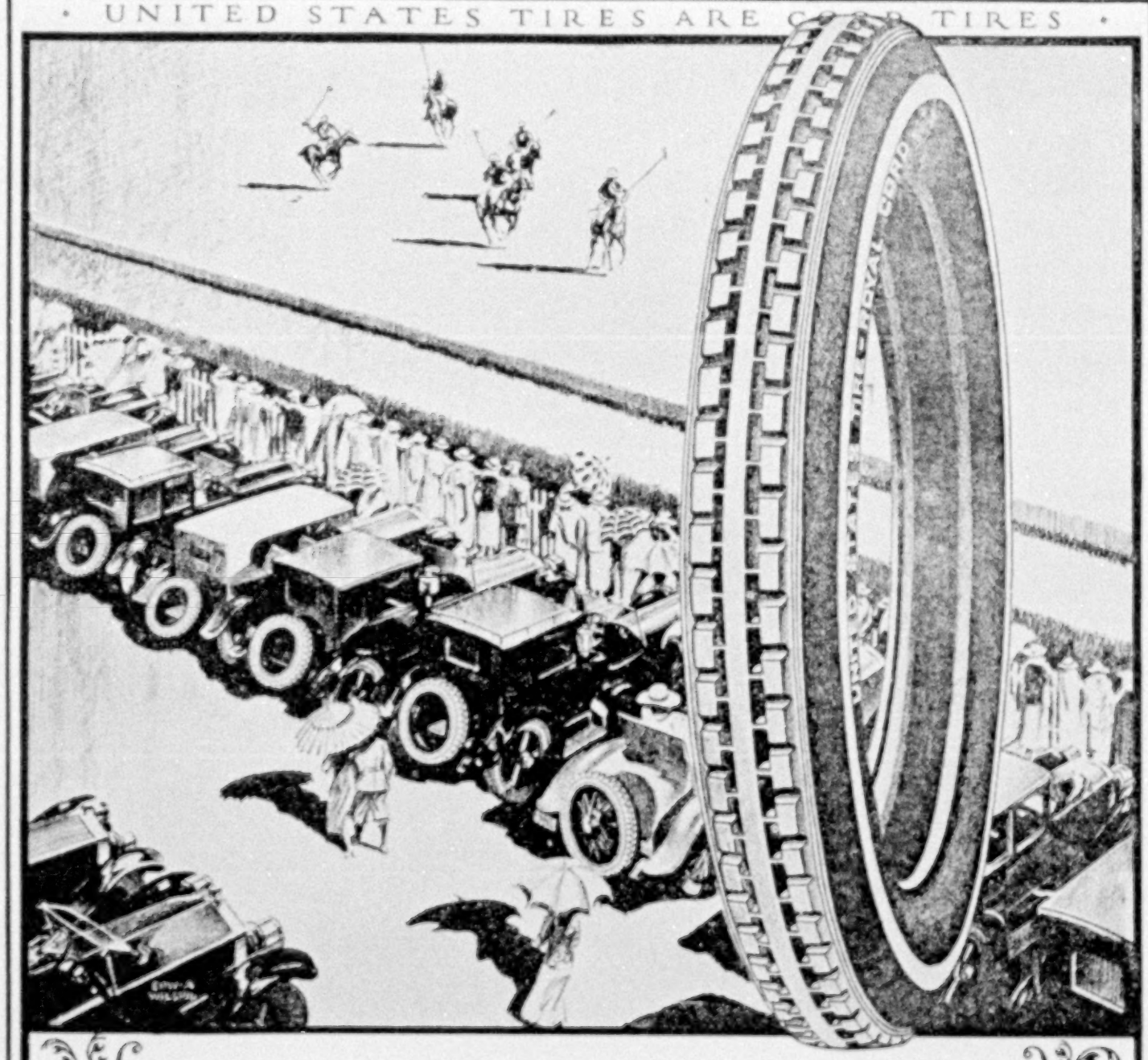

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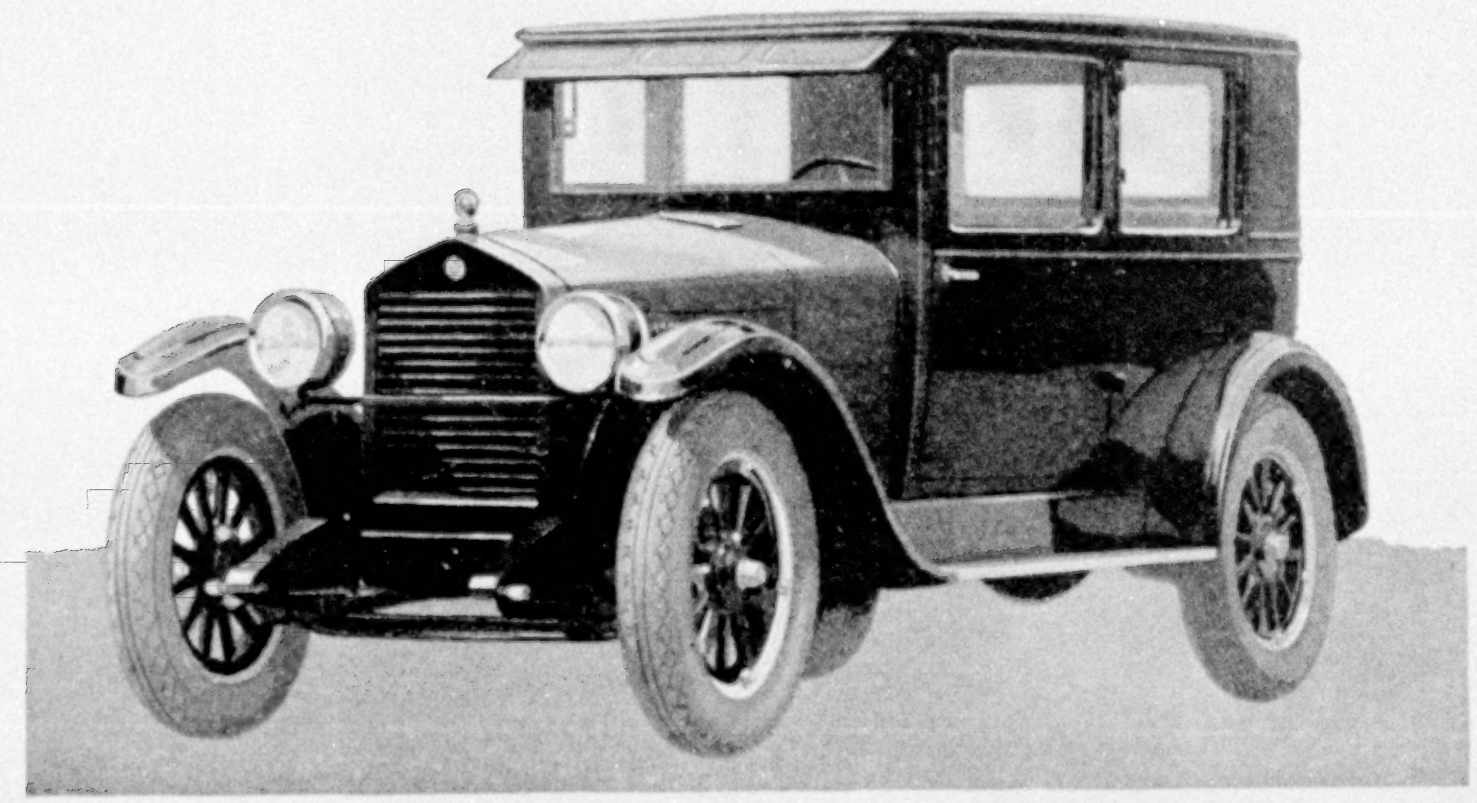

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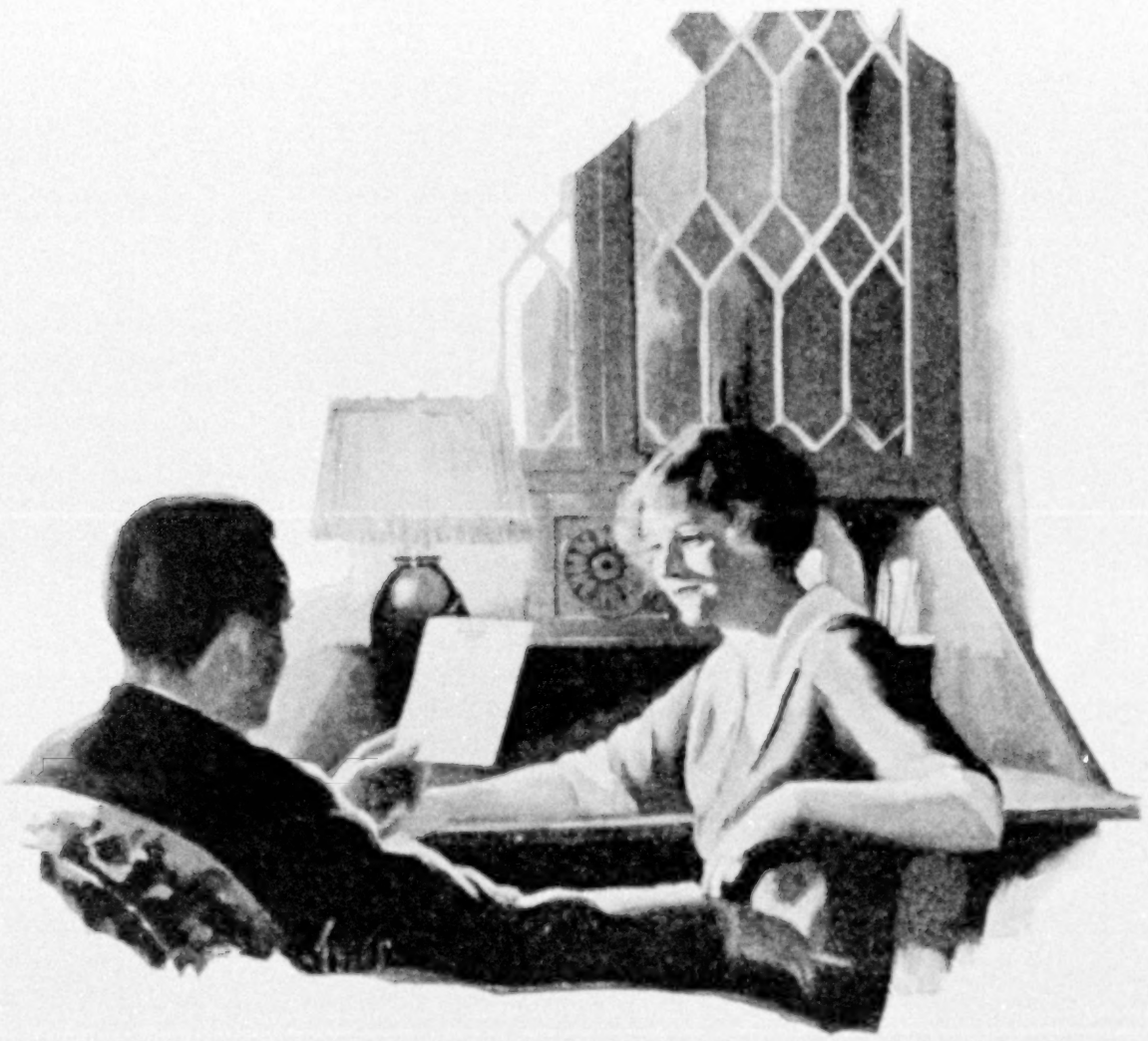

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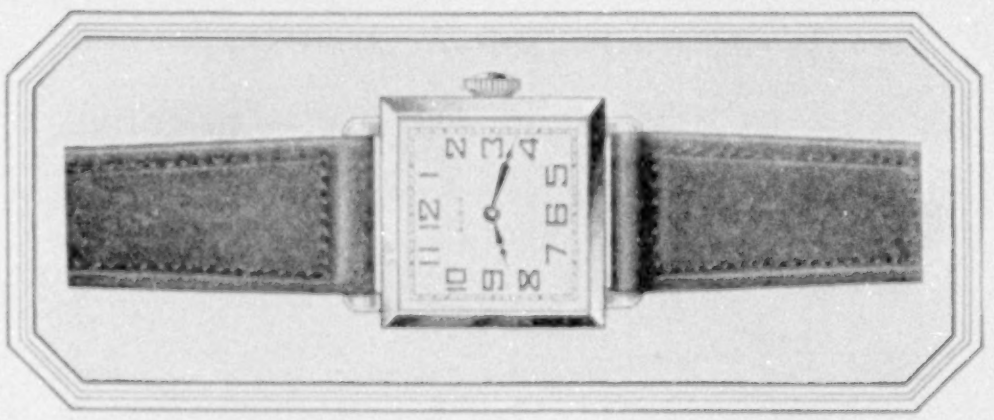

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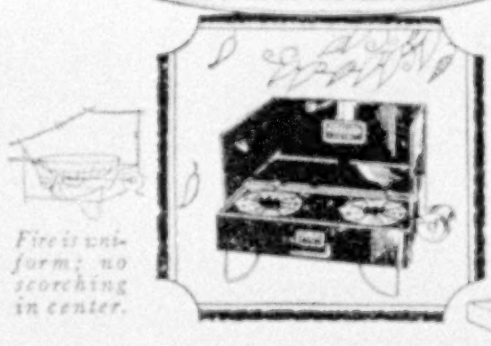

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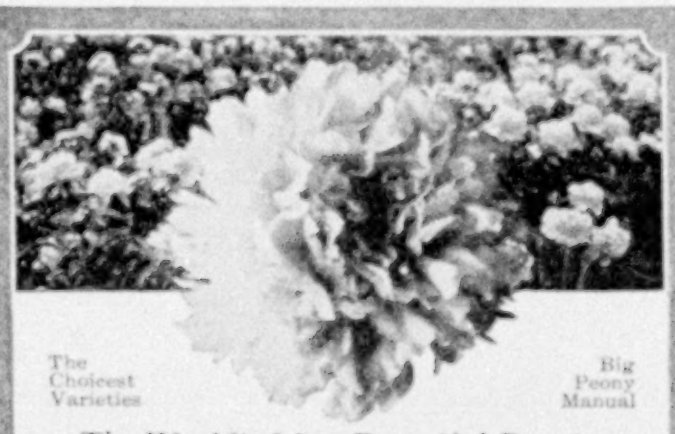

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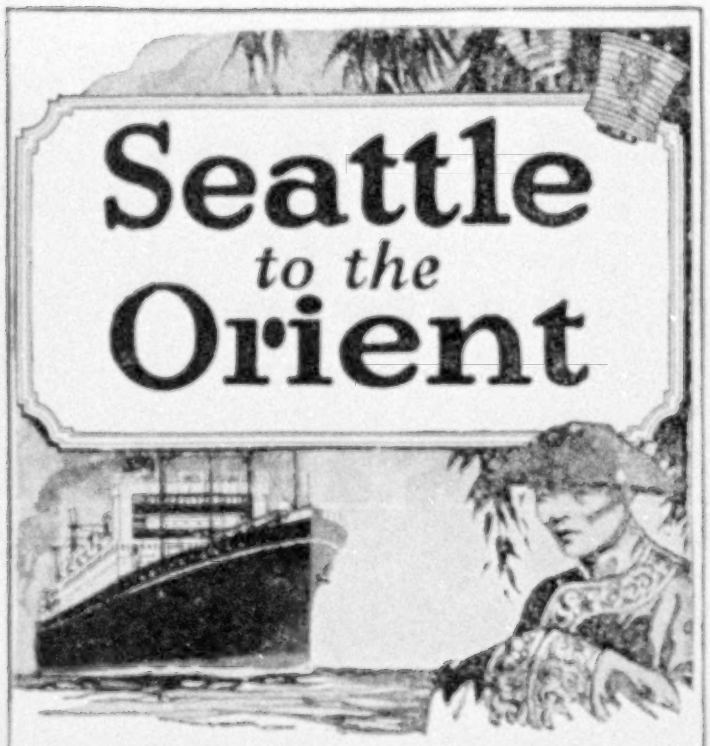

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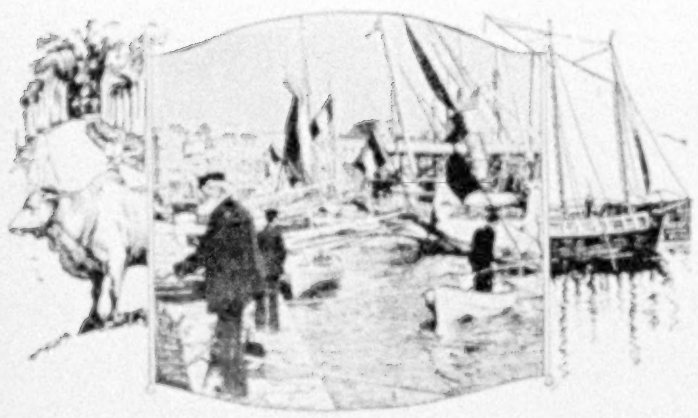

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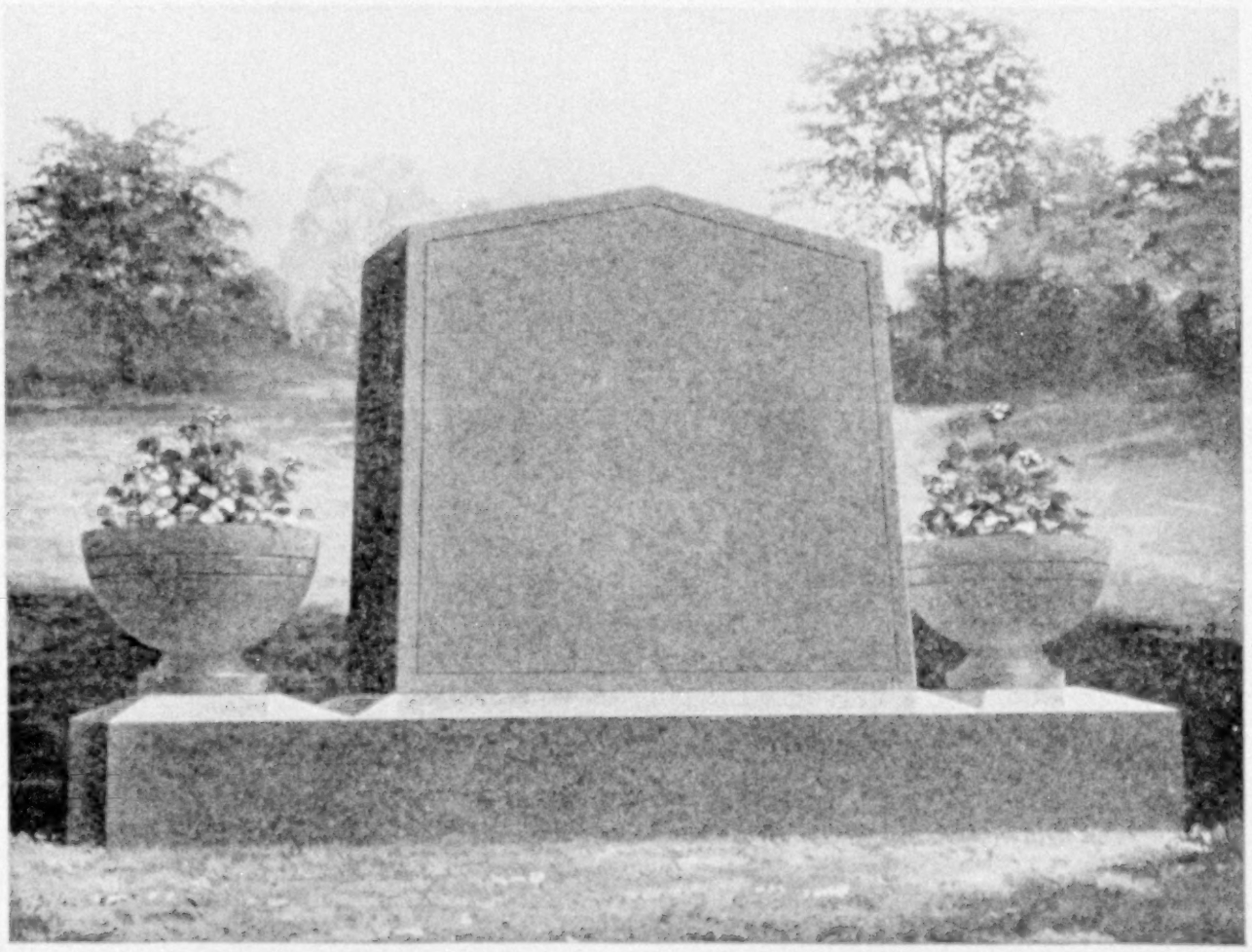

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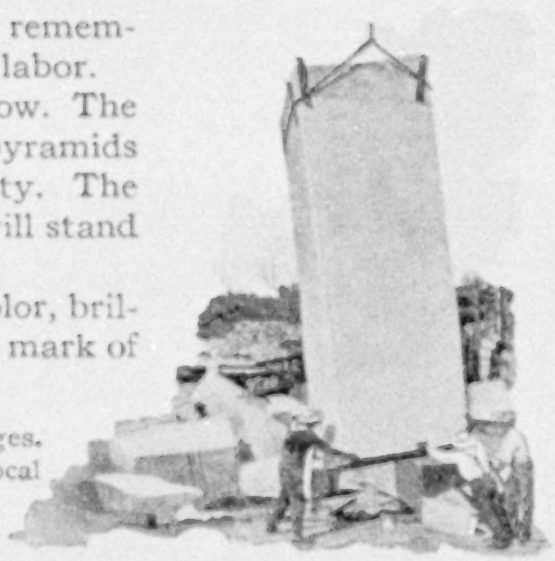

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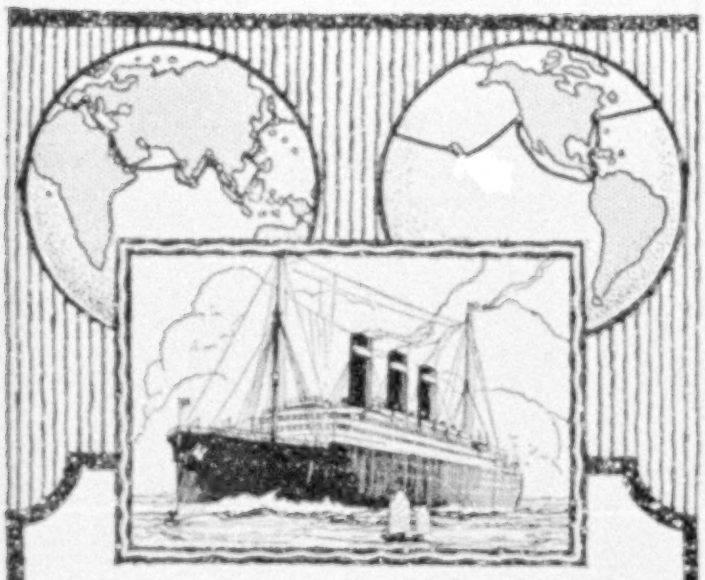

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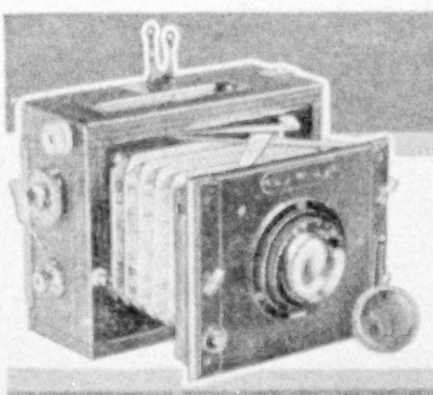

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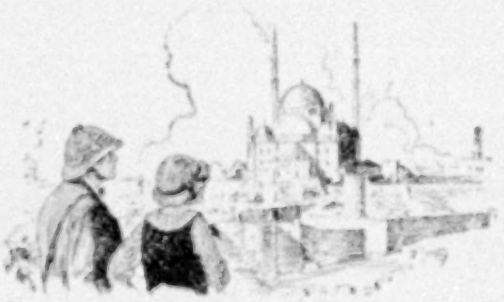
To the Mediterranean



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Beware of Fat

DO you know whether you weigh too much or too little? If your weight is just right, congratulate yourself. Probably not one person in ten knows what his proper weight should be nor realizes how important it is to maintain that weight.

What is the right weight? Experts who have studied the subject of weight in its relation to health tell us that the weight tables generally in use are misleading. They give only average weights, which are the composite of the good and the bad. These averages have been assumed to be the correct weights. As a matter of fact, they are not.

Up to the age of 30, it is well to weigh five or ten pounds more than the average weight for your age and height. But from 30 on, the best weight is from 10% to 20% less than the average. At age 50, men and women are at their best when they weigh considerably *below* the average for their height.

The reason is simple: The extra weight in earlier years is needed to give the body plenty of building material and to fortify it against tuberculosis and other infections to which young people are particularly subject. When we are older and food for growth is not needed, there is no longer any advantage in carrying the heavier burden of weight.

Stop and think of the six oldest people you know. The chances are they are not fat. Life insurance statistics have proved that as a rule the fat do not live to be really old men and women.

Fat is dangerous—a definite menace to life. And this is why: People who drag masses of flesh around are putting a strain upon their vital organs. High blood pressure, trouble with heart, kidneys or lungs often follow along in the train of excessive weight. The heart has to work extra hard pumping blood to tissues that the body *never was meant to have*. The digestive tract has a remorseless burden put upon it trying to dispose of needless food. An eminent specialist says that in at least 40% of the cases—fat is the predisposing cause of diabetes.

Remember, prevention is the better part of reducing. But if you *are* fat and don't want to have heart trouble or any of the diseases that fat induces—what are you to do about it?

Do not take any "fat reducers" except on the advice of your physician. They are usually viciously harmful and reduce nothing but your pocketbook. Have your doctor find out whether there is anything wrong with you physically. Sometimes glandular disturbances will cause fat.

Overweight is not always due to overeating. Exercise does not always reduce. But 90 times out of 100 the trouble is too much and too rich food and too little exercise. If you are overweight do not let laziness or complacency permit you to remain fat. Begin to reduce *right now*.

People past their youth who weigh 20% more than the average have a one-third greater death rate than the average. Those who are 40% overweight have a 50% greater death rate than the average.

The Metropolitan Life Insurance Company recognizes overweight as so serious an impairment among its policyholders that it has issued a booklet which contains much valuable information for those who wish to reduce their weight.

This is the booklet that tells of the methods we have used in bringing a certain group of our own Metropolitan employees back to normal weight.

This simple regime of diet and exercise has been found to be most effective. In several cases as much as 50 pounds have been eliminated—safely and comfortably.

In this booklet will be found a weight table prepared according to the latest study on the subject, as well as a complete program of diet and exercises that will help you to reduce your weight if you are organically sound.

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HALEY FISKE, *President.*

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Bohême—Mi chiamano Mimi Carmen—Micaela's Aria	6038	2.00

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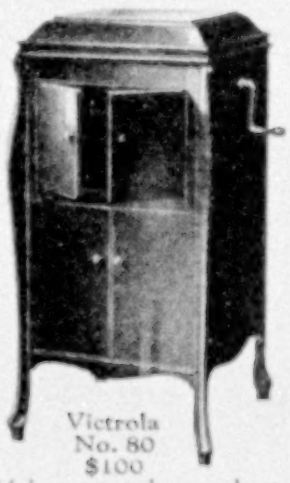

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THE NATIONAL GEOGRAPHIC MAGAZINE

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DISCOVERING THE OLDEST STATUES IN THE WORLD

A Daring Explorer Swims Through a Subterranean River of the Pyrenees and Finds Rock Carvings Made 20,000 Years Ago

BY NORBERT CASTERET

MEMBER OF THE INTERNATIONAL INSTITUTE OF ANTHROPOLOGY, LAUREATE OF THE ACADEMY OF SCIENCES OF TOULOUSE, LAUREATE OF THE ACADEMY OF SPORTS

FORTY miles from Toulouse and 12 from St. Gaudens, the village of St. Martory (Haute-Garonne) stretches along both banks of the Garonne, between a line of steep hills on the left and an alluvial plain to the right of the river.

Some distance to the south the wall of the Pyrenees closes one in along a 125-mile front, stretching from the Pic du Midi de Bigorre on the west to the Canigou in the east (see map, page 126). The countryside consists of a fertile plain dominated by arid and rocky hills and, closing in the southern horizon, the Pyrenees, where forests of birch and fir border snowy peaks and glaciers.

One cannot live in this country without some day being tempted to attain, by excellent and picturesque roads, the near-by mountain chain and to ascend at least one of the peaks which show their clear-cut profiles against the blue of the sky.

A STORM CAUSES A MOUNTAIN CLIMBER TO BECOME A CAVE EXPLORER

While still a student, before the World War, I spent my vacations in exploring these fascinating peaks, and at evening, bent over my bicycle, with weary limbs but an enraptured soul, I returned through the twilight, already dreaming of my next climb.

But the mountains are capricious. Down in the plain the sun is master all summer long, but in the high valleys and on the precipitous slopes, storm clouds gather from time to time and fierce tempests burst forth unexpectedly.

When bad weather held me prisoner in some rude mountain village, I rebelled at my enforced inaction. One day, driven down from the mountains by a frightful storm, I sought refuge in the entrance of one of the numerous caverns of the region. I had candles with me, and while waiting for the storm to pass over I explored this cave.

It was the first time that I had entered a grotto, but this one was huge enough and rugged enough to satisfy the longings of an Alpinist. Although this subterranean excursion did not provide the intoxicating delight occasioned by summits crowned with everlasting snows, the majesty and mystery of these vaults, like marble halls, made a profound impression upon me.

I returned to explore this cavern; then others, and still others, with the result

Photograph by Aérienne Bernon

CARCASSONNE FROM THE AIR: LIKE A PAINTED TOWN UPON A PAINTED LANDSCAPE

Seventy-five miles east of Montespan lies Carcassonne, whose ancient fortifications probably have no equal for completeness and strength in all Europe. This airplane view shows clearly the remarkable double line of ramparts, of which the outer measures more than 1,600 yards in circumference. These ramparts are protected at frequent intervals by towers and can be entered only by two gates, both of which are elaborately fortified. In the central foreground is the château, and to the right the old cathedral of St. Nazaire, dating from the eleventh to the fourteenth centuries. A portion of the inner line of defenses is attributed to the Visigoths of the sixth century; the rest, including the castle, to the eleventh or twelfth century, while the outer rampart was probably built in the thirteenth century.

that little by little I deserted mountaineering and surrendered myself to the lure of subterranean excursions.

Now I do not know of an impression more absorbing than that which one experiences on entering a grotto of whose mysterious, shadowy labyrinths one is ignorant, while drops of water, falling from the high vault, alone disturb the silence with their thousand little songs.

SMALL CAVES OFTEN CONTAIN RICHEST PREHISTORIC RELICS

In reading the works of French prehistorians and through visits to the prehistoric gallery of the museum of Toulouse, I learned that it is not the largest caverns which conceal the majority of the prehistoric remains, but rather small grottoes and shelters under the rocks near the rivers.

Having explored many of the huge caverns of the mountains, I patiently excavated, sometimes with success, the humble caves of St. Martory, happy and stirred when my pick restored to the light of day some rude object fashioned by primitive man.

But one evening of July, 1914, on returning from one of these peaceful days given over to thoughts of ancestors and forgotten ages, I learned that the flail of war had beaten upon this charming countryside.

Nine months later, having attained the age of 18, I enlisted in the army of the Republic and for more than three long years lived with thousands of my companions the hard life of the trenches.

Often crowded in subterranean shelters, filthy and wet, I came to envy the lot of the prehistoric hordes, who could stretch out in vast caverns and who had as enemies only wild beasts. I did not dare hope that some day, perhaps, I could return to my digging and my beloved studies.

But victory was on the way, and there came the time when, thanks to our determination, to the aid of our Allies, and to the intervention of America and her brave troops, we emerged victors.

THE STUDY OF FAMOUS CAVES BEGINS

Returned, safe and sound, to the pleasures of peace, I took up again with ardor the study of prehistory and my excavations.

Methodically I undertook to study the prehistoric veins of the region. In addition to many nameless grottoes, I visited such celebrated ones as that of Aurignac, which has given its name to one of the most important periods of prehistory; Gourdan, the richest field of exploration in the Pyrenees; Marsoulas, Gargas, and Niaux, celebrated for their prehistoric carvings and paintings; the Mas d'Azil, unique in Europe, and finally the marvelous grottoes of the Trois Frères and Tuc d'Audoubert, discovered and explored by M. le Comte Bégouen, professor of prehistory at Toulouse, which contain, together with numerous prehistoric carvings and paintings, two clay statues of bison which are the finest known examples of prehistoric art.

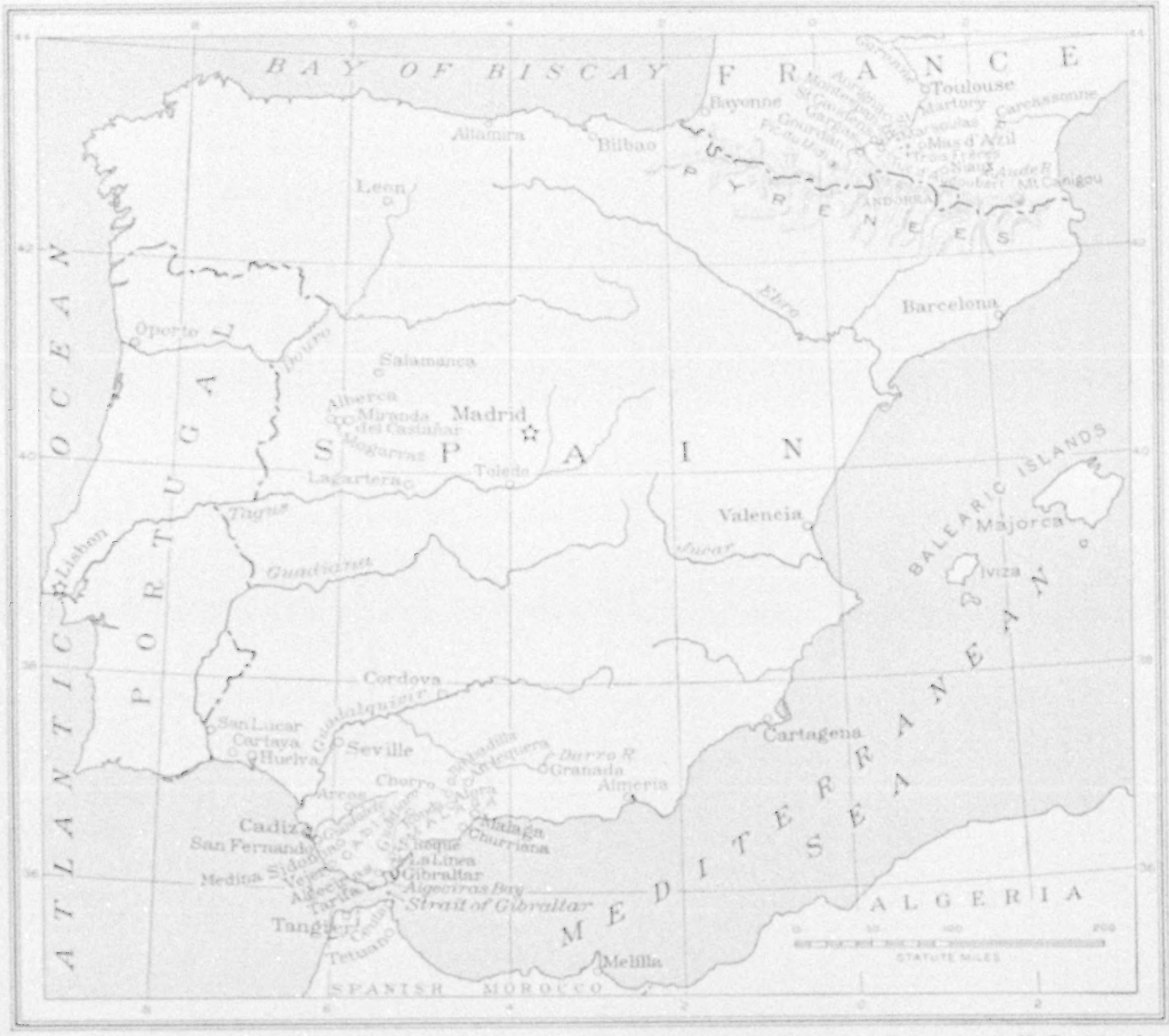
The visit which I made to the grotto of Tuc d'Audoubert with the mission of the International Institute of Anthropology was to have for me the most happy consequences, for this picturesque excursion, which included a voyage in a small boat on a subterranean river, the scaling of great rock masses by means of ladders, and crawling through low passages, opened my eyes to certain conditions which were to serve me later and bring to me the joy of a great discovery.

THE CHÂTEAU OF MONTESPAN

In August, 1922, my searches led me to the little village of Montespan, 9 miles southwest of St. Martory. Built on the slope of a hill 1,500 feet high, which rises a little more than a mile south of the Garonne and the railway between Toulouse and Bayonne, this village takes its name from the feudal castle of Montespan, whose imposing ruins greet the voyager from afar (see page 130).

But if these ruins still have enough importance to attract attention, the historic memories which cling to them are not less interesting, for they link the spot to the name of Madame de Montespan, favorite of Louis XIV.

About 1400 there shone at the court of the King of Navarre a young Spanish girl of great beauty and of such charming ways that, according to a contemporary tale, "although a virgin, Heaven gave her progeny."



Drawn by A. H. Bumstead

A MAP SHOWING THE LOCATION OF THE MONTESPAN CAVERN IN THE FOOTHILLS OF THE PYRENEES

Other famous caves in this region are to be found at Aurignac, Gourdan, Marsoulas, Gargas, Niaux, and Tuc d'Audoubert. The Spanish provinces of Cádiz and Málaga are described elsewhere in this number (see "Adventurous Sons of Cádiz" and "From Gibraltar to Granada").

The child, Roger, in spite of his illegitimate birth, had the soul of a gentleman, and on attaining maturity distinguished himself by his adventurous excursions, after the manner of the paladins. He was even able to surpass them in splendor, for, having inherited from his mother vast lands in the Nébouzan, he became a rich and powerful knight.

MONTE HISPANIA BECOMES MONTESPAN

Not having a name worthy of his ambition and wishing to create one for himself, he called himself Roger d'Espagne. In order to give more brilliance to this new title, he had built on the peak of a hill dominating the Garonne an imposing château to which he gave the name "Monte Hispania."

Soon the peasants who were distributed over the countryside came to attach their cottages to the flank of the hill. Later "le Mont d'Espagne" was changed, in the language of the country, to "Montespan," and for two centuries the lords of Montespan ruled throughout the whole region.

In 1663 the knight Louis de Pardaillan de Gondrin, Marquis of Montespan, descendant of Roger d'Espagne, made his entry at the court of the "Roi Soleil" and married one of the queen's maids of

Photograph by Maynard Owen Williams

ON THE MAIN ROAD LEADING TO MONTESPAN FROM THE LABARTHE-INARD BRIDGE OVER THE GARONNE

"In August, 1922, my searches led me to the little village of Montespan, 9 miles southwest of St. Martory" (see text, page 125).

Photograph by Maynard Owen Williams

A PEASANT INTERIOR IN MONTESPAN

The discoverer of the prehistoric remains near Montespan used to leave his bicycle with these good folks when he rode over from St. Martory during his investigations. Mother and daughter occupy the bed in the corner.

honor, a girl both pretty and coquettish, Mlle. Athénaïs de Rochechouart, better known as Mlle. Tonnay-Charente.

On becoming Mme. de Montespan the new marquise did not hesitate to usurp the place of Mlle. de la Vallière beside the king, and soon she became the favorite of Louis XIV, while the Marquis de Montespan withdrew to his castle beside the Garonne, where he wore the black "mourning of his disgrace."

Legend has it that eight years later Mme. de Montespan, herself in disgrace, returned to end her days at Montespan. The fact is that on the refusal of her husband to receive her she withdrew to Bourbon-l'Archambault, where she died in 1707.

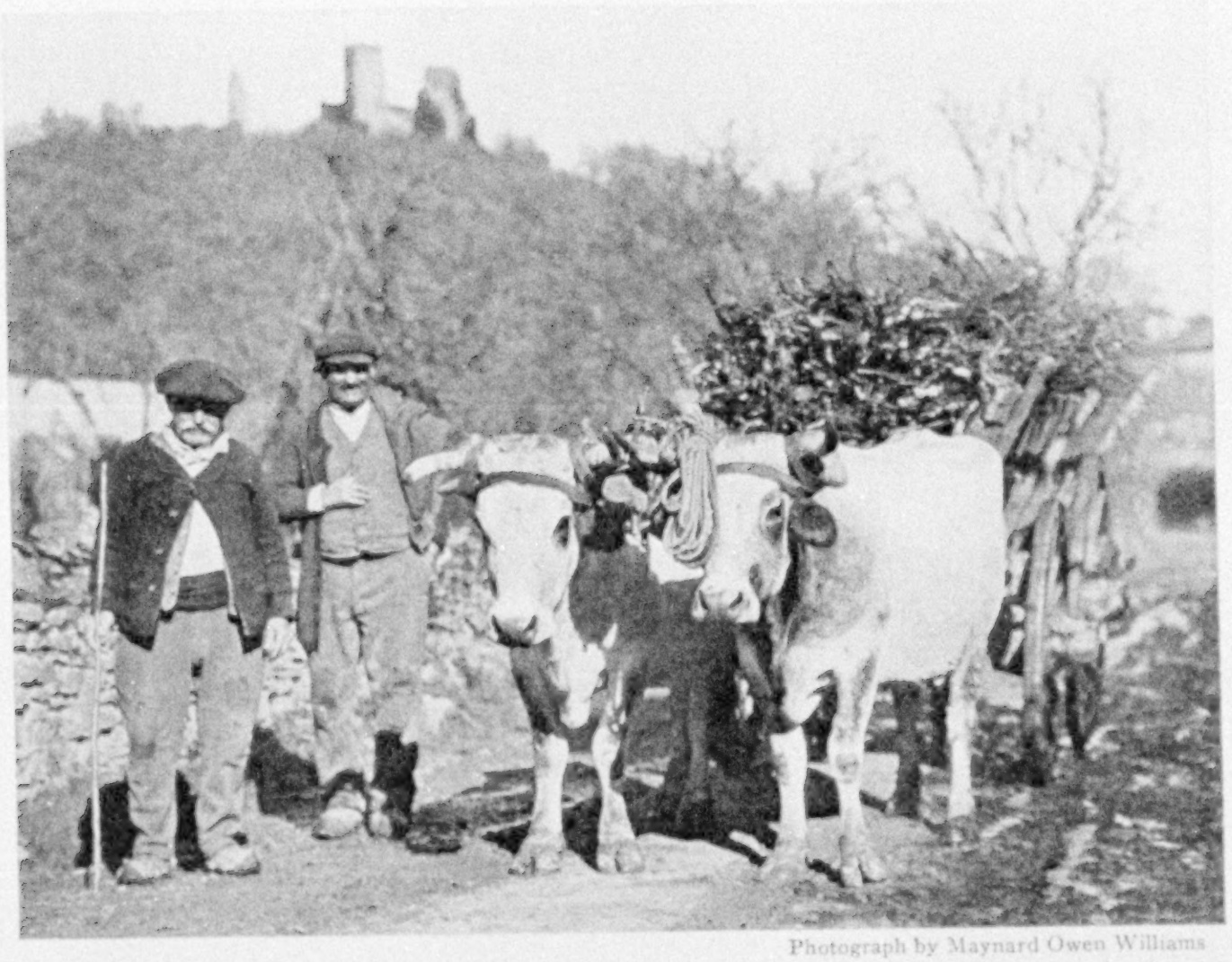
The reader will forgive this historic parenthesis and résumé of several centuries. Let us, then, return to the month of August, 1922, for a few moments before plunging into the darkness of prehistory and of a grotto since celebrated.

THE FIRST EXPLORATION OF THE GROTTO OF MONTESPAN

Arrived at the picturesque village of Montespan and after a visit to the ruins of the castle just referred to, I began a search for caves suitable for my studies.

It was not long before I was led to a point at the base of a hill near a hole in the rock from which emerged a stream. The people of the village knew the spot, and assured me that during exceptionally dry summers one could enter a natural corridor by wading, but that after 200 feet the water touched the roof and the grotto ended (see illustrations, pages 133 and 134).

It was thus that I found things on August 18, 1922; for, after having slid into the cave through a hole the size of a



Photograph by Maynard Owen Williams

A WORKER WITH HIS OXEN ON ONE OF THE NARROW ROADS LEADING DOWN FROM THE CHÂTEAU OF MONTESPAN

man's body, I found myself in a horizontal and rectilinear gallery 10 or 12 feet wide and 6 or 8 feet high, along which I waded through the water over a clay and gravel bottom.

After 125 feet the gallery makes a turn to the right, the ceiling suddenly becomes lower, so that one must bend double, and at the end of 60 feet of this difficult progress the water becomes deeper and one finds himself at a cul-de-sac, the roof disappearing under the water.

On arriving at this discouraging spot, memories of former explorations, and in particular that of the cave of Tuc d'Audoubert, already mentioned, caused me to decide that instead of immediately leaving the cave, as was natural under the circumstances, I would give myself over to reflection.

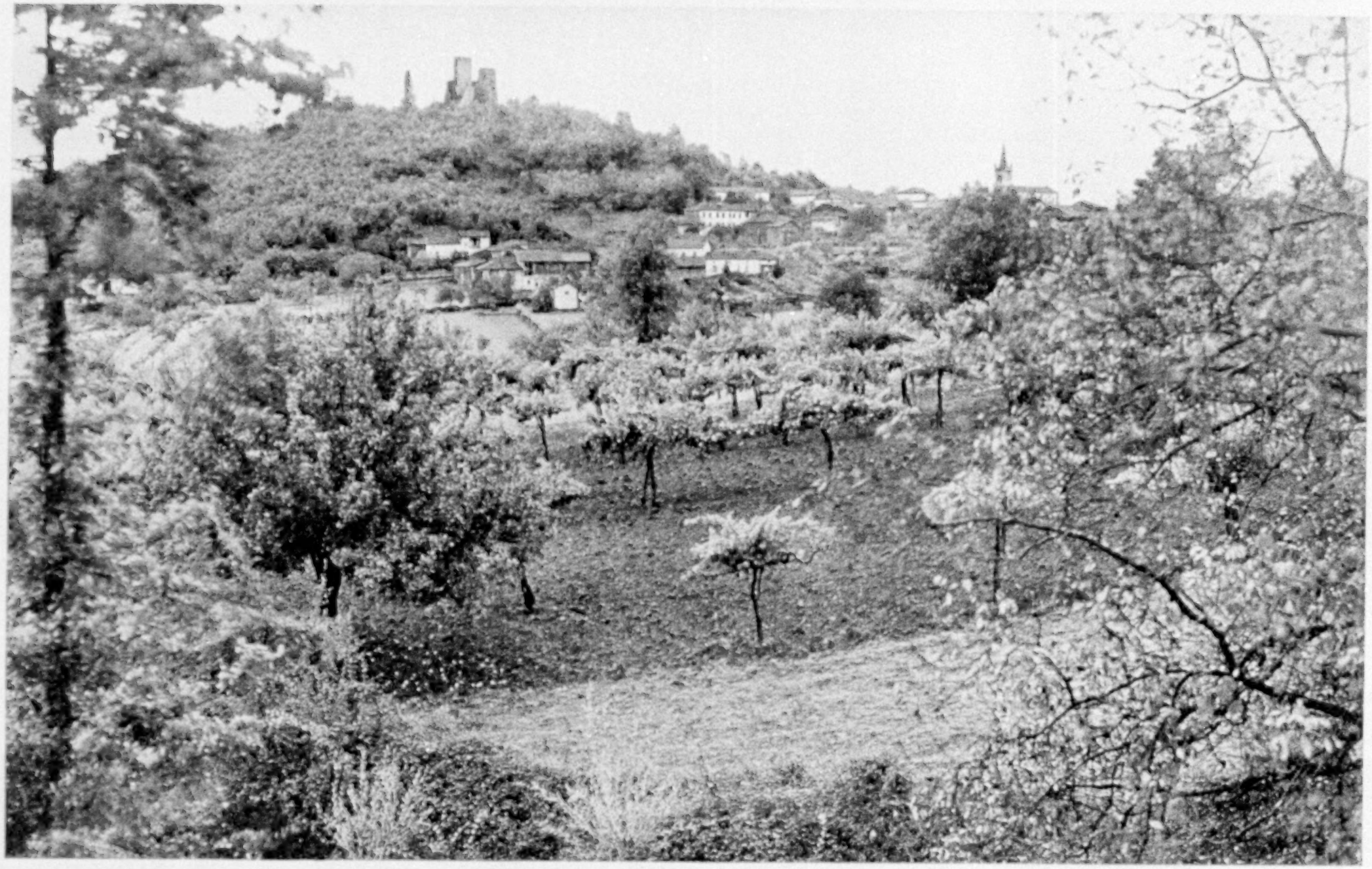
The geologic nature of the rock caused me to suppose that this subterranean stream had, perhaps, forced its way through the calcareous foundation of the hill, thus forming an underground stream of which the tiny corridor where I found myself was only the outlet.

A study of geologic periods shows that at the end of the Glacial Epoch (during which prehistoric man appeared in the Pyrenees) the climate was characterized by a sharp, dry cold closely analogous to that of present-day Lapland.

If, then, this subterranean stream existed at that time, it had been dry during a long period at the beginning of the Quaternary Epoch and the cave could have sheltered the miserable primitive troglodytes of that time.

FACING UNKNOWN DANGERS

It was after having turned over in my mind these suppositions of so fragile a nature, but so tempting to a prehistorian, that I resolved to venture farther into the vitals of the mountain and into the unknown reaches of this subterranean stream.



Photograph by H. A. V. Coles, © Illustrated London News

THE PICTURESQUE VILLAGE OF MONTESPAN SEEN FROM THE MONTESPAN CAVERN ENTRANCE

Crowning the distant eminence is the historic feudal château of the Montespan family (see text, page 125).

With the water reaching to my shoulders, in this current which flowed through a submerged tunnel, I thought in the meantime of how senseless it might prove to persevere alone in an enterprise so dangerous.

What were the probabilities?

For an indefinite distance ahead of me I might find the stream touching the roof as it did at the point of egress; I might be barred by a rocky cul-de-sac; reach a subterranean lake; come to a precipice, to a pocket of poisonous air, or to a pile of branches carried down by the waters, and which hold danger or death in their tangled arms.

After having weighed these diverse possibilities in the impressive silence of my solitude, I decided to push on into the unknown, to pass, if possible, this barrier which the combination of water and rock seemed to render inviolable.

A DIVE THROUGH THE SUBTERRANEAN RIVER

Putting my candle on a projection of the wall, I breathed in enough air to last me for two minutes under the water (a habit to which I am accustomed) and plunged into the stream with one hand ahead of me, the other in contact with the submerged roof. While thus hurrying forward, suddenly my head emerged from the water and I could breathe.

Where was I? I had not the slightest idea. The darkness was absolute. Without doubt I had passed through a siphon tunnel. Immediately I turned around and dived toward the spot from which I had come, for nothing is more dangerous than to lose one's sense of direction in such a case.

Having regained the cavern below the siphon, where the light of my candle still shone in the black water, I was able to consider this water-filled tunnel which eight years before had stopped the celebrated Professor Jeannel, who had explored many grottoes throughout the world and had considered impossible the feat just accomplished.

In spite of the rather insignificant result of this attempt, I already foresaw the anxiety and difficulty of a subsequent exploration which I hoped would be long and fruitful.

The following morning I was once again at the entrance to the grotto, and provided with equipment as simple as it was light. Having undressed and hidden my clothes in the bushes, I lowered myself into the subterranean stream, holding in one hand a lighted candle and in the other my rubber bathing cap containing matches and candles.

WHAT THE CANDLE REVEALED

This simple case, kept well closed, would permit me to pass under the water and have after each dive into the stream the means of relighting my candles. (May I add, that to supplant this mode of lighting by an electric pocket lamp is imprudent in a cave, for some dry batteries have a very limited duration and sometimes suddenly go out.)

Arrived at the siphon, I took the precaution to orient myself, as on the preceding day, in order to find again the pocket of air, and, diving through the siphon a second time, I found myself on the other side, immersed up to my chin.

I shook my dripping cap before relighting a candle with all the impatience that was consistent with caution.

At last the flickering flame enabled me to observe that, as far as the eye could see, the roof was parallel to the surface of the water, which was separated from it by a thin layer of air.

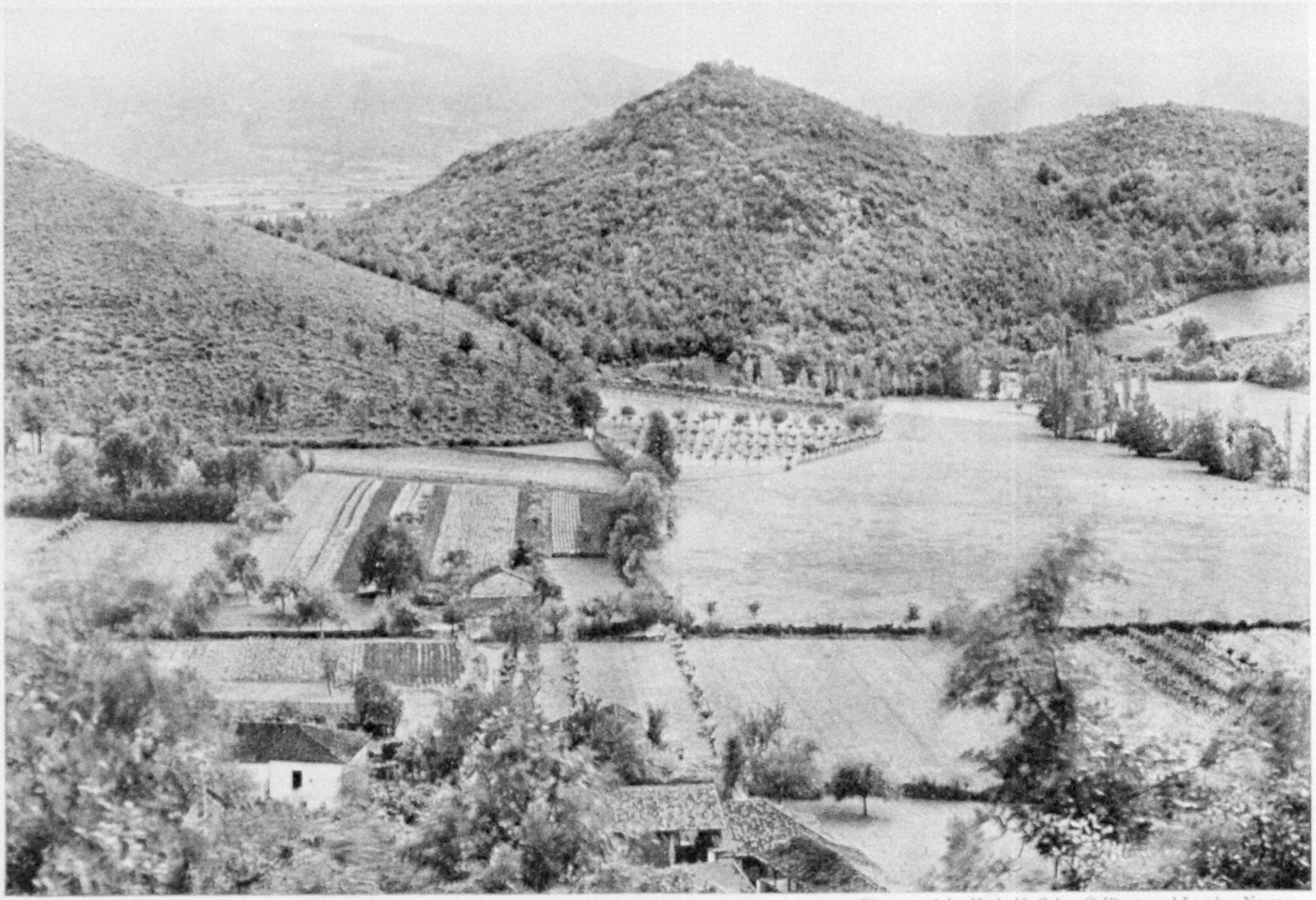
This time my anticipations were realized, for I was exploring a subterranean stream hitherto unknown.

I progressed then, my head adjusting itself to the least irregularities of the rock, and after 400 feet my toes touched a bank of clay at the entrance to a large room, where I could free myself from anxiety, but not from the cold which chilled me.

Here the roof attained a height of 30 feet and the stream half lost itself under enormous blocks of stone fallen from the ceiling. Above, there opened an air shaft which I then thought inaccessible, but which I subsequently explored.

PLUNGING FURTHER THROUGH ICY, BLACK WATER

Crossing this hall, encumbered with immense boulders and beautified by slabs of stalagmite, I entered once more the



Photograph by H. A. V. Coles, © Illustrated London News

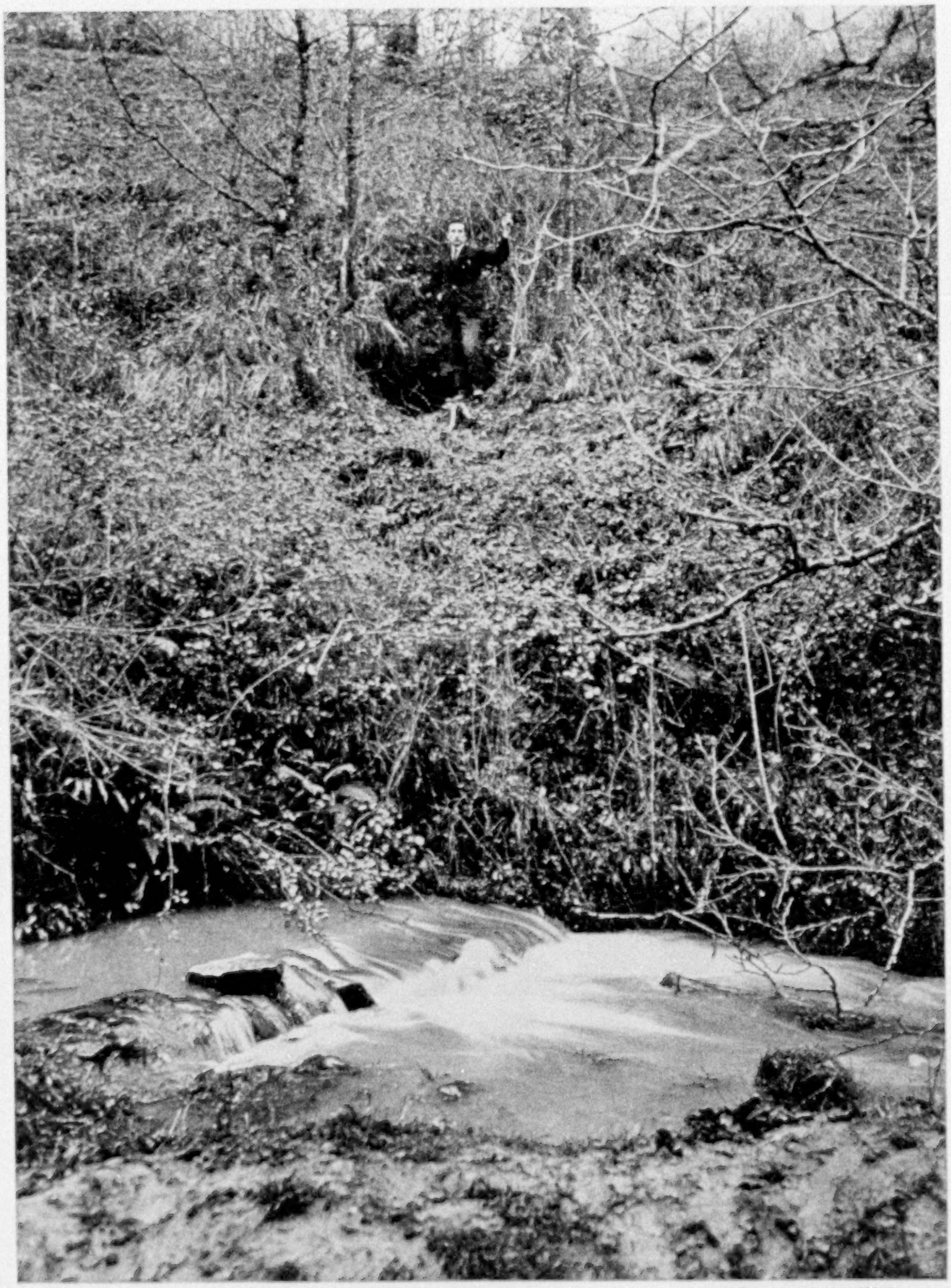
THE LOVELY LANDSCAPE SURROUNDING THE ENTRANCE TO MONTESPAN CAVERN

The cavern opening is at the base of the wooded hill in the center (see page 138). This entire region is rich in romantic interest (see text, page 125).

Photograph by H. A. V. Coles, © Illustrated London News

AT THE ENTRANCE TO THE OLDEST STATUARY GALLERY EVER FOUND BY MAN

The discoverer is standing in swimming attire at the mouth of the natural shaft leading to the cavern. A shepherd in the right foreground is pointing to the outlet of the stream.



Photograph by Maynard Owen Williams

CASTERET STANDING BESIDE THE ENTRANCE OF THE MONTESPAN GROTTO

When the great discovery was made, the authorities offered to give the young explorer the land around the entrance to the cave, but he declined the gift, and the place has been set apart as a government monument.

Photograph by Maynard Owen Williams

A LITTLE SHELTER AND A FINE TREE NEAR THE GROTTO OF MONTESPAN

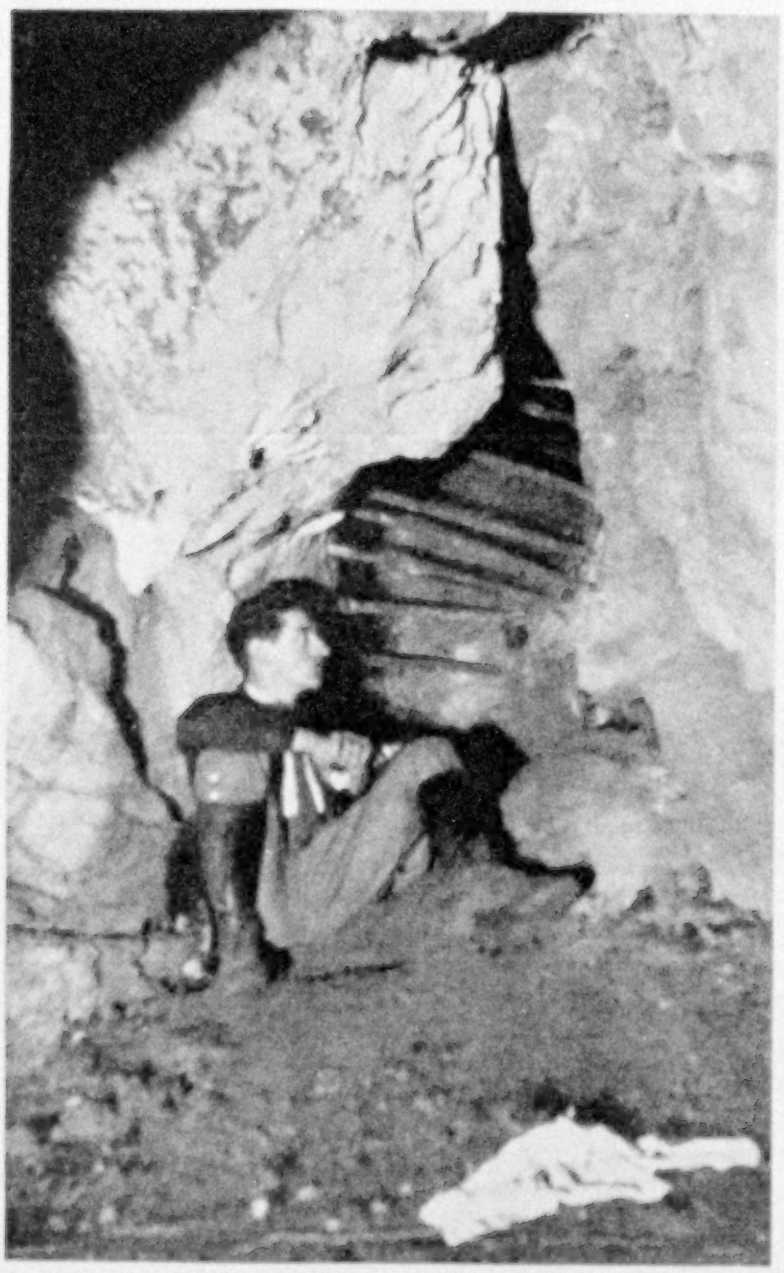
When Maynard Owen Williams, of THE GEOGRAPHIC's European staff, visited the Montespan Grotto with M. Casteret, they left their wearing apparel at this spot and made the plunge into the icy February waters coming down from the snows of the Pyrenees. Of his entrance into the cave, Mr. Williams writes: "After a four-foot skid on the muddy hillside, which was stopped by a kindly bramble bush, to the salvation of my camera and the torture of my feet, I grabbed a small bush and made a somewhat less hurried approach to the small entrance of the cave, which is, perhaps, 10 feet above the level of the brook. Little by little we edged our way up the arched cavern, each of us with a candle. The cold water from the roof hit our cringing backs with an arctic caress."

bed of the stream to continue my solitary and exciting exploration.

Although familiar with the difficulties of certain caves, never had I experienced to such a degree the feelings of isolation, of oppression, and of fear such as subterranean surroundings inspire, where the most banal accident, such as getting my matches wet, might prove fatal.

Having circled an enormous pillar which rose in the bed of the stream itself, I faced a new siphon of depressing aspect, for the water was deep and the vault bristling with black and pointed stalactites.

Had I stopped here, my chief discovery might have been made a year earlier than it was, but the excitement and lure of the unknown drove me on up the course of this Stygian stream.



Photograph from Norbert Casteret

AT THE OPENING LEADING TO THE SUBTERRANEAN BROOK

The discoverer has put bars of iron across the hole to exclude possible vandals. The Montespan villagers think little of M. Casteret's find, but his fellow-scientists pay him the highest tribute.

Diving through this siphon, which seemed to me appreciably longer than the first, I was forced to crawl for some time in the water in a gallery like a rolling mill, while the arched roof let fall a veritable rain which often extinguished my candle.

This groveling progress, rendered difficult by constant friction against the rough walls, enabled me to reach a hall much larger than the first, where there was an indescribable chaos of huge rocks, evidence of formidable disturbances which were produced there at some undetermined period.

At this point I was forced to give myself over to a frantic and disorderly course of gymnastics to warm myself a little and to stir up the circulation in limbs benumbed by a prolonged stay in cold water.

AT THE END OF THE UNDERGROUND JOURNEY

My suppositions relative to the existence of this underground river were then amply justified, and I asked myself how far this succession of silent, subterranean corridors would lead me. After a reasurring glance at my supply of candles, which I judged sufficient, I once again started across the jumbled rocks which necessitated varied modes of scaling. Traversing with difficulty this large hall, I immersed myself again to enter an interminable gallery of varied dimensions.

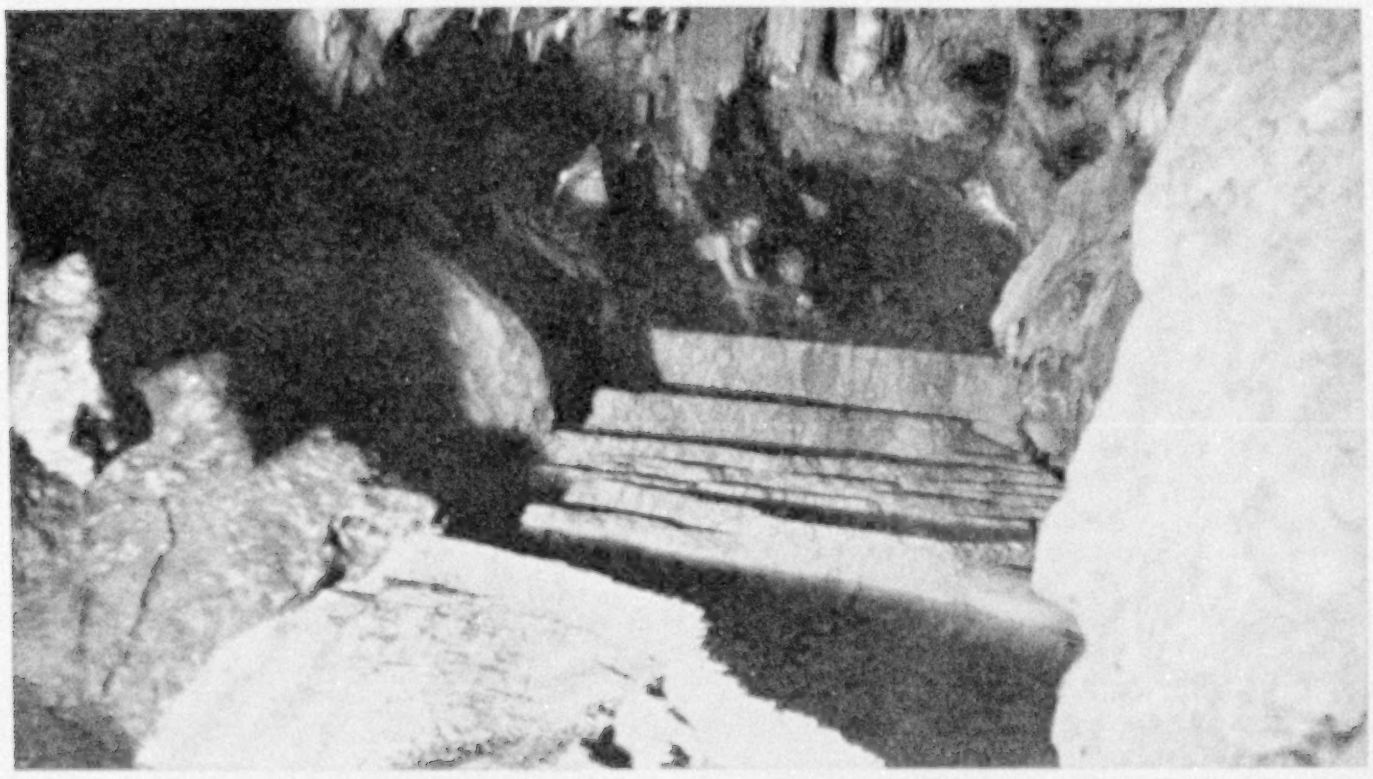
At each narrow gullet where I was forced to squeeze between columns of limestone I thought I had reached the end of the grotto, but always my feeble candle lighted up Dantesque regions hitherto hidden from human eyes.

So I progressed, sometimes in water, sometimes on slippery banks of clay or gravel. I had long since lost any sense of time and of the distance I had covered when I was stopped short by an impenetrable narrowing of the walls. For some time before this the roof had been very low and I had been forced to crawl, but this was the end.

For several hours I had been hoping to reach the upper end of this long tunnel, and now a narrow opening, impossible to traverse, stopped me without further hope of knowing the origin of the subterranean stream.

TADPOLES FURNISH VALUABLE INFORMATION

My disappointment did not last long, for, having passed my head and arm through the hole, I uttered a cry of triumph which frightened away the mys-



Photograph from Norbert Casteret

A NATURAL LADDER AT THE ENTRANCE TO THE DRY GALLERY OF MONTESPAN GROTTO

terious inhabitants of a pool filled with mud and branches. The presence of a swarm of entirely unlooked-for tadpoles, that had just been disturbed for the first time in their lives, proved that only a few yards farther upstream the underground river left the light, the meadows, and the woods to burrow under the mountain through which I had so painfully made my way.

The presence of the tadpoles in that impenetrable part of the stream was sure proof to me that the way out to the open air was quite near, for these creatures never venture far into underground water. Afterwards I learned that only a few yards separate this place from the spot where the river enters the earth by an impassable fissure.

With increasing weariness I retraced my way, but without anything unusual happening except an agonizing uncertainty as to what direction I should take at various points

FIVE HOURS UNDERGROUND

Having entered the grotto in full daylight, under a glaring sun, I emerged, chilled to the bone, into the darkness of night, having spent five hours in traversing less than two miles underground.

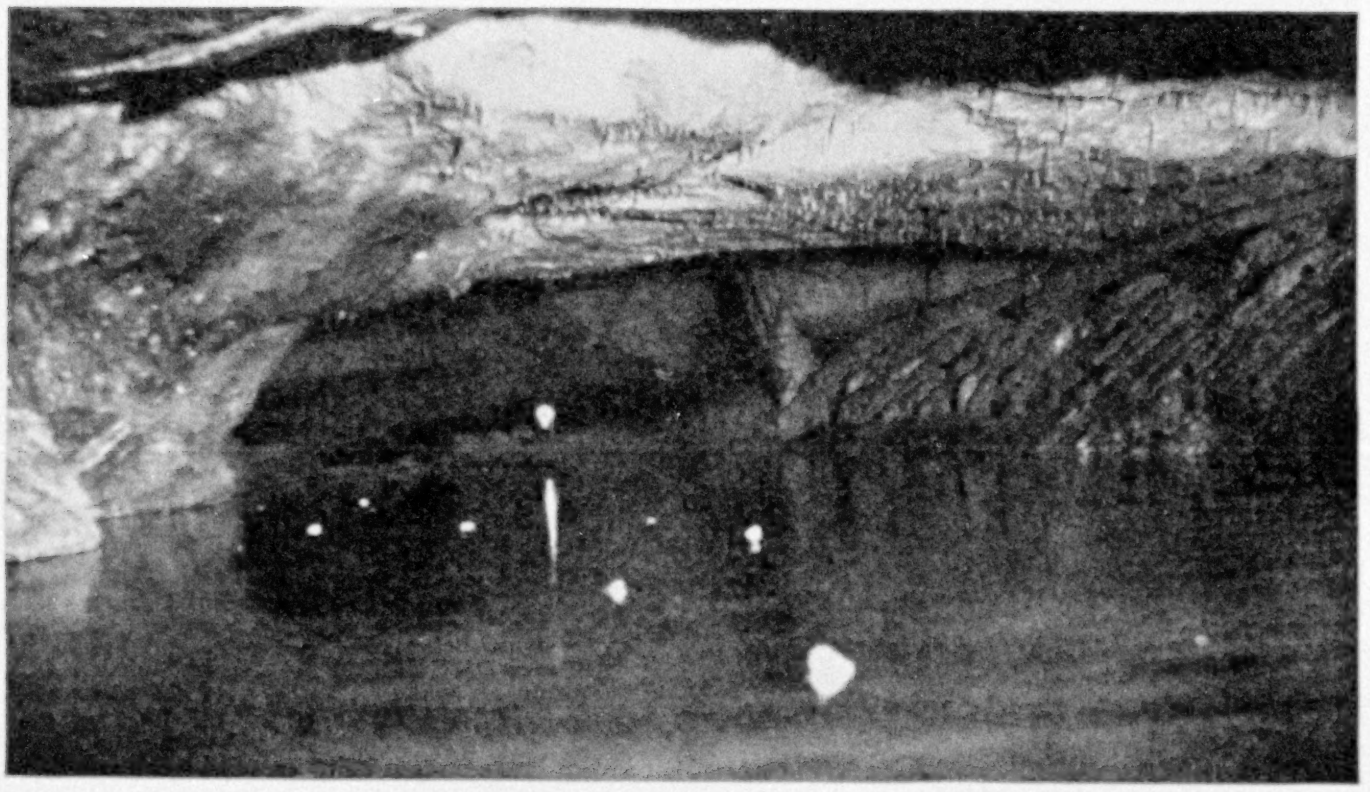
Before beginning the description of the mountain which conceals this strange underground stream, I must add that I made several careful explorations, one after the other, in this grotto, searching for a possible prehistoric dwelling dating from the period when water did not fill the cave.

Unfortunately, there came a season of rain to swell the stream and to make access to the caverns absolutely impossible, and I was obliged to put off till the following year the continuation of the exploration.

It should be remembered that apart from the months of August and September, when entrance was possible under conditions already described, the river is swollen by the rains of autumn, winter, and spring, during which seasons the vaults are flooded for long distances.

TOPOGRAPHY OF MONTESPAN

However, I had found and picked up in the underground stream a bovine tooth which seemed to me to be that of a prehistoric bison (*Bos primigenius*). The finding of this tooth, although the only one and in bad condition, strengthened my supposition that the grotto had been entered by cave dwellers, and I waited impatiently for the return of favorable conditions in order to resume my explorations. Count Bégouen, whom I had told about my discovery, encouraged me to persevere.



Photograph from Norbert Casteret

THE SUBTERRANEAN STREAM 400 FEET FROM THE ENTRANCE

In the course of this account I have situated the village and château of Montespan near the river Garonne, in the midst of a system of wooded mounds which constitute outlying foothills of the Pyrenees. These secondary hills belong to the Cretaceous (chalky) layer (green grit sandstone superior) and all the uncovered parts show bare layers of chalk.

The hill upon which the feudal château is built is nearest to the Garonne, above which it rises to a height of 425 feet (see page 130).

The village, which is built on the south flank of this hill, numbers 540 inhabitants, who occupy themselves with cattle raising and the culture of the vine, corn, potatoes, and fruit trees.

Apple trees, the main resource of the country, can be seen everywhere, in every field and beside every road, and there are also extensive woods of oak and chestnut.

A mile south of the castle and within sight of the village rises a small chain of hills, of which the seven or eight conical summits, in the shape of ruins, strangely resemble one another.

Running from south to north through the base of the central summit, which is the highest (1,650 feet), is the stream which flows through what I have christened the Grotto of Montespan (see page 132).

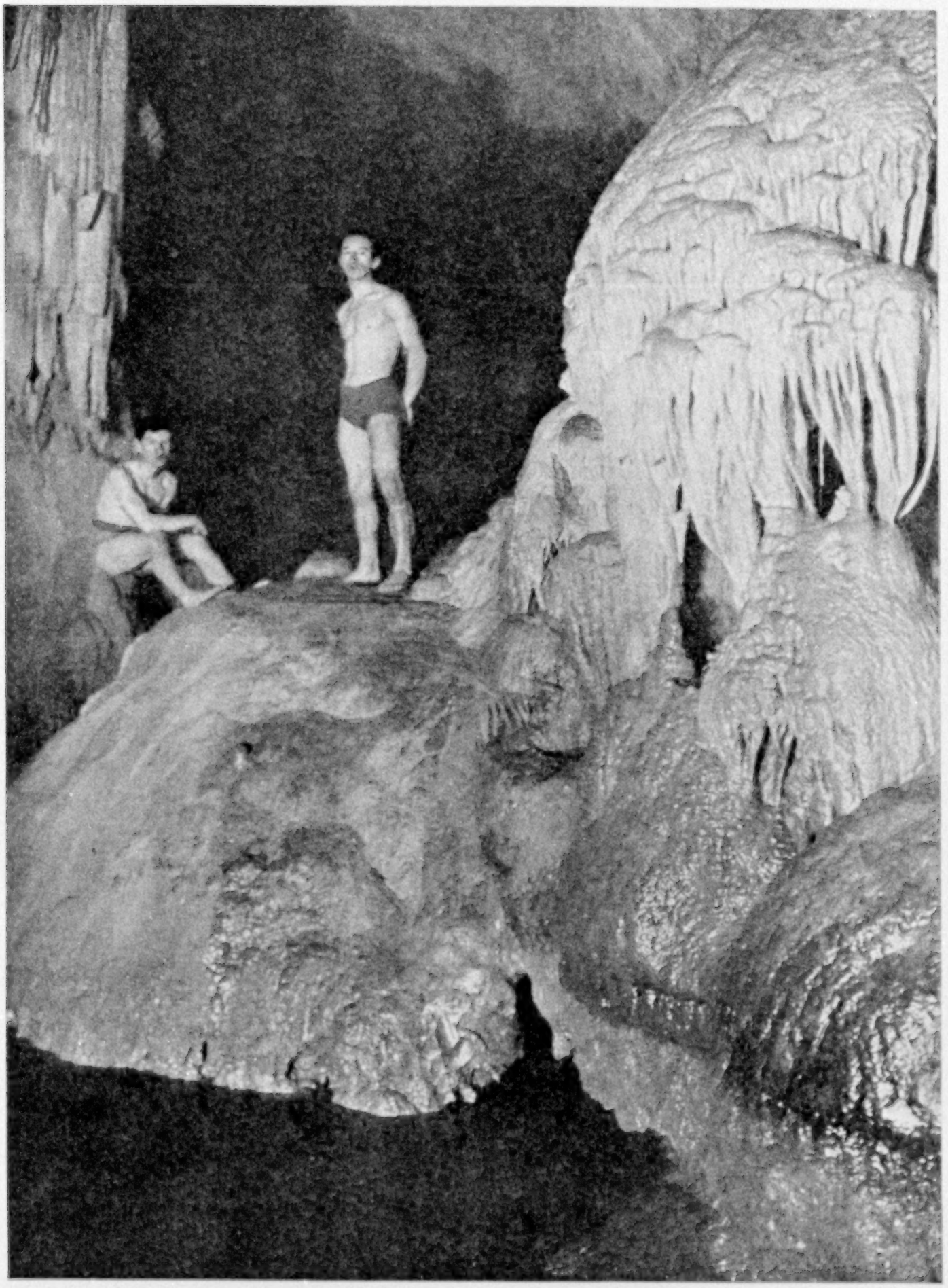
This stream has its source in the open air, surrounded by mountain peaks. After a short course it surges against the southern slope of the high hill, where it disappears in an impassable sink hole and emerges again at the base of the northern slope, after a course of more than three-quarters of a mile of subterranean windings, through an opening almost as impenetrable as the upper entrance. One can only enter the grotto by a small natural vertical well, situated a few yards above the point of outlet for the water (see page 134).

Once more in the open air, the stream winds for two miles through the meadows, passes the foot of the hill on which the château stands, furnishes the village laundry with clear water, turns to the west, and empties into the Garonne.

ARCHEOLOGICAL DISCOVERIES IN THE GROTTO

On August 23, 1923, one year after my first exploration, I returned to Montespan in order to resume my investigations, which had been interrupted by the rising of the water. I had brought with me a friend, Henri Godin, a great lover of subterranean excursions.

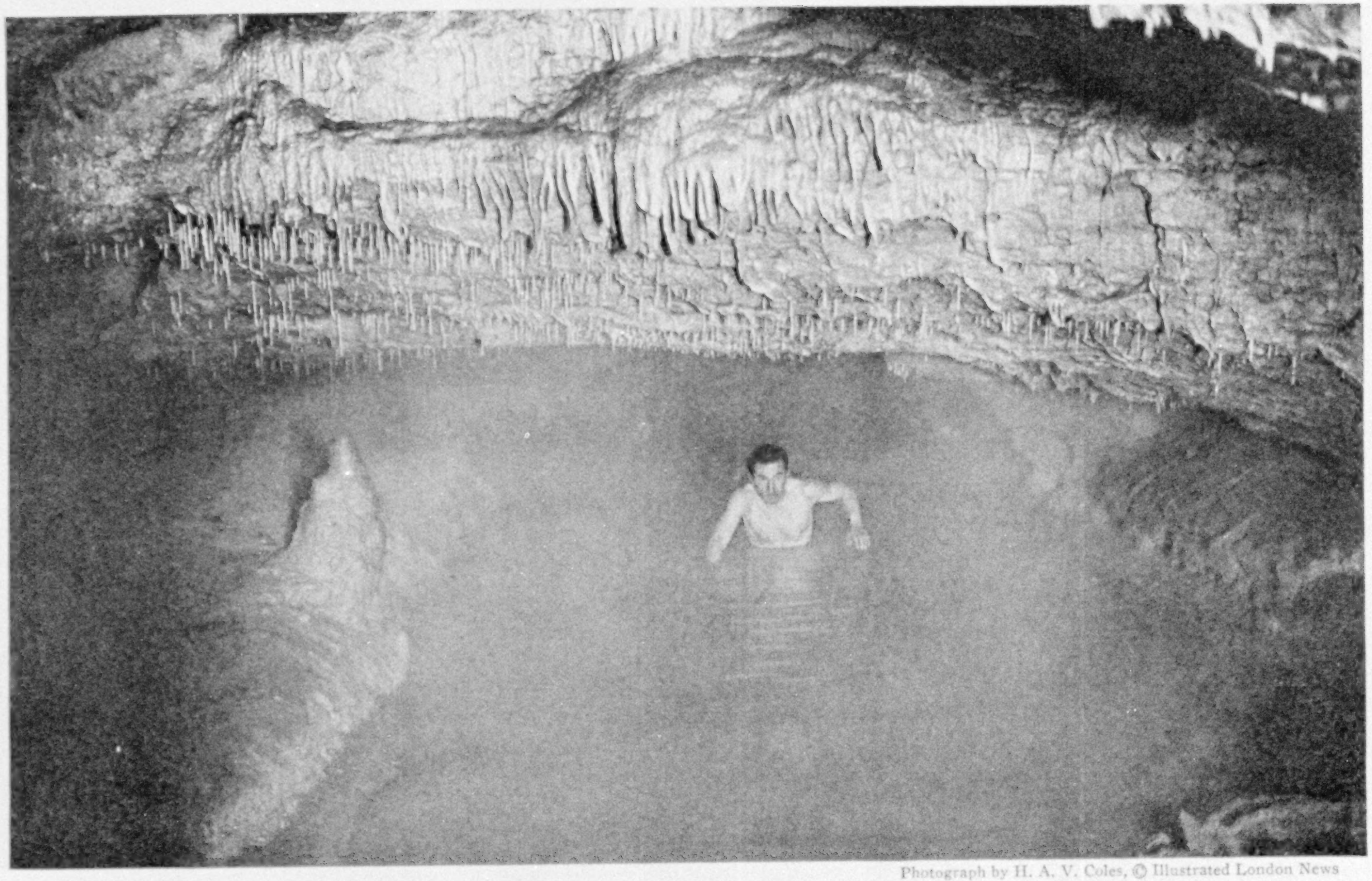
The summer of 1923 having been unusually dry, the water was lower than



Photograph by H. A. V. Coles, © Illustrated London News

THE DISCOVERER OF PREHISTORIC SCULPTURES IN THE GROTTO OF MONTESPAN

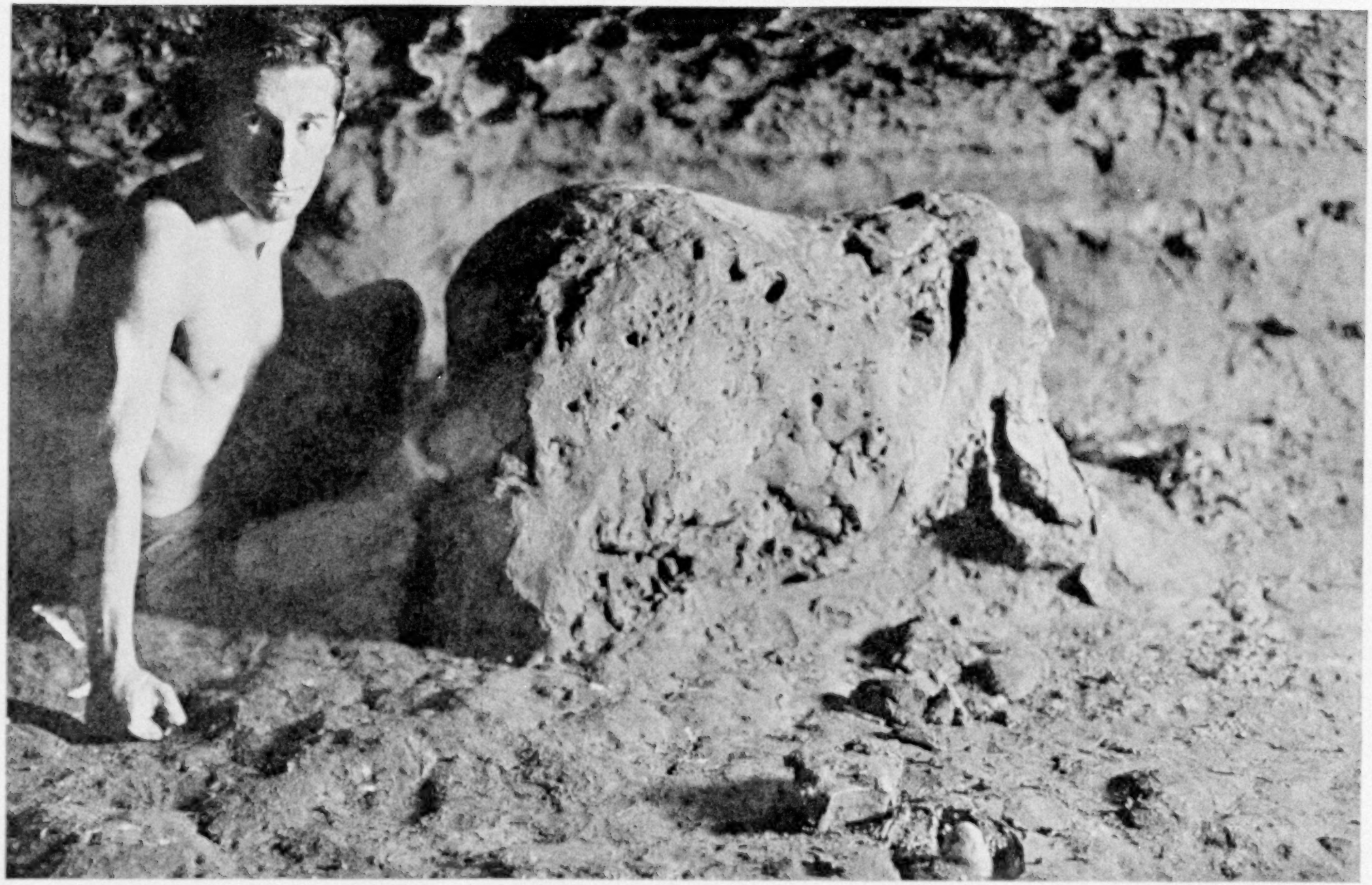
M. Norbert Casteret (standing) and his brother are above the subterranean stream through which the former swam and dived at the risk of his life. When he first explored the cavern, he plunged into the icy black waters alone, carrying a candle and matches inclosed in a rubber bathing cap.



Photograph by H. A. V. Coles, © Illustrated London News

READY TO REPEAT THE DARING FEAT THAT LED TO A GREAT ARCHEOLOGICAL DISCOVERY

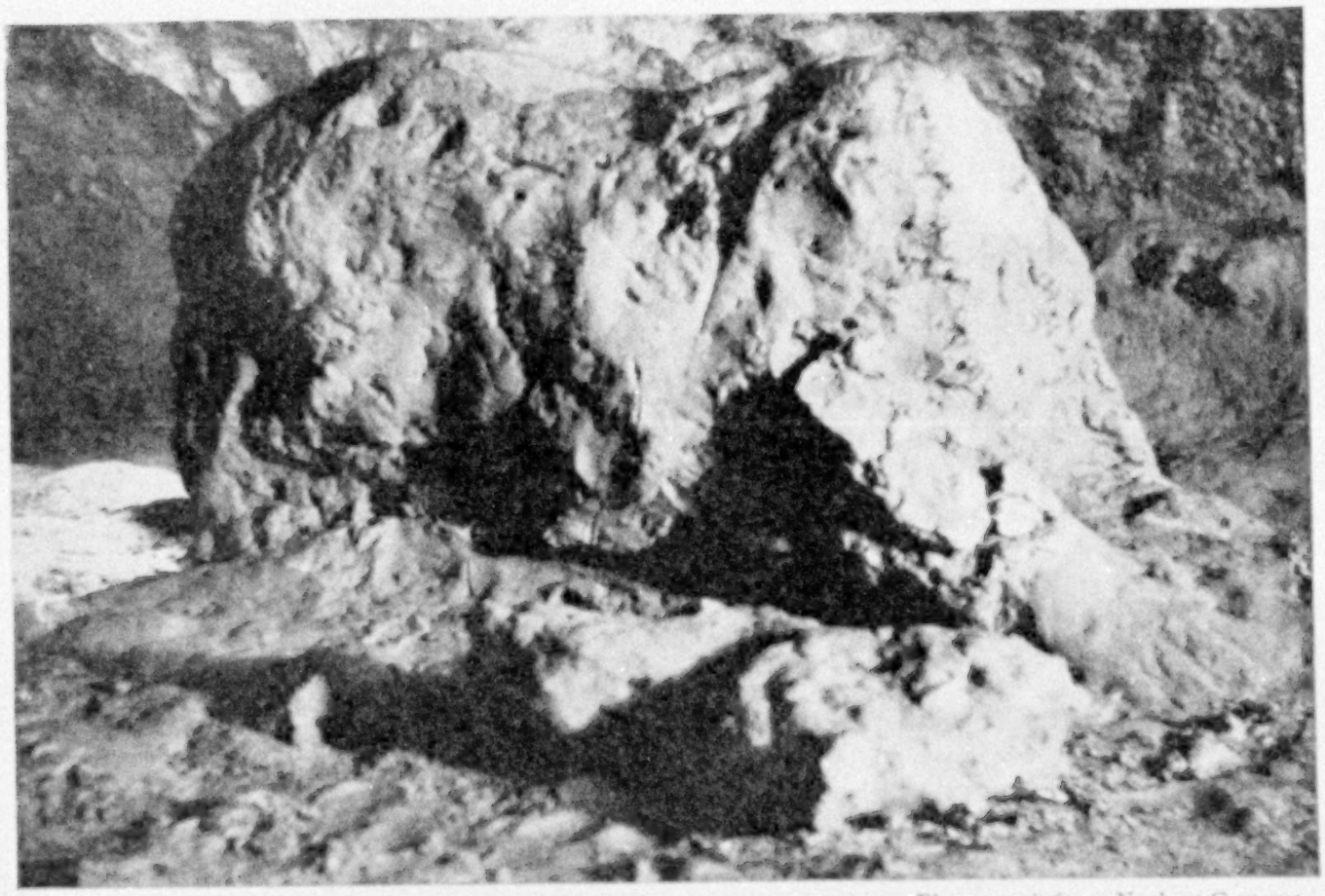
M. Norbert Casteret in the subterranean stream through which he swam to explore the Montespan Grotto. At several points, although he did not know whether there was an open surface beyond, he dived through siphons where the water rose to the roof (see sketch, page 150).



Photograph by H. A. V. Coles, © Illustrated London News

NORBERT CASTERET RESTING BESIDE THE PREHISTORIC CLAY BEAR IN THE GROTTO OF MONTESPAN

The statue, 3½ feet long by 2 feet high, is scarred with spear thrusts made by prehistoric hunters during rites of propitiation. A real bear skull has fallen down between the forepaws (see text, page 150).



Photograph from Norbert Casteret

ANOTHER VIEW OF THE CLAY BEAR (SEE ALSO ILLUSTRATION, PAGE 141, AND TEXT, PAGE 149)

during the preceding year. At the first siphon, the vault, which formed a depressed arch, was not completely submerged, the top of the arch being some inches above the water level. That enabled us to pass without extinguishing our candles, and we could thus reach the first hall, situated 400 feet from the entrance.

We advanced to an enormous pillar whose base was submerged in the stream, and which seemed to warn the visitor not to proceed, for a few yards farther on was the second dangerous siphon through which I had passed the year before.

By circling this pillar, so imposing in the half darkness, one may see that it divides the grotto, which at the right terminates at the siphon entrance to the stream that I had explored the preceding year. At the left one can penetrate into a gallery 650 feet long, where a sensational discovery was to repay me for my pains and perseverance (see p. 150).

This gallery, 16 feet in width and 13 feet in height, has at its entrance a fairy-like appearance. Its walls and roof are covered with trickling limestone and glistening stalactites. As for the floor, it is formed of a succession of picturesque slabs, whose scalloped edges, honeycombed, form a natural staircase. Each step is a tiny basin full of limpid water. The entire floor is made of granular limestone of a lovely bright yellow (see page 137).

But this scene of enchantment ends abruptly, for, having turned at right angles, one finds himself in a gallery where the rock, destitute of deposits, is dark and the floor dull earth.

We made our way tandem fashion in this corridor, where there was no sound but that of our bare feet on the soft clay. We were forced to pass the last 100 feet lying flat on our bellies, stretched between the rough ceiling and the cold and slimy soil. Coming again to a section where one could stand almost erect, I chose a nook in a swelling of the gallery, which seemed to be a good place to dig a test shaft, and, armed with my portable pick, which goes with me on all excursions, I attacked the compact clay.

My friend looked at me with a tolerant

Photograph by M. Norbert Casteret, © Illustrated London News

ANIMAL SCULPTURE 20,000 YEARS OLD

This is an Aurignacian artist's conception of a bison, carved on one of the walls of Montespan Grotto. Bison have been extinct in France for thousands of years.

glance, as though asking if my ardor as navvy were going to force him to rest a long time idle in this cold and unattractive corridor.

A PREHISTORIC FLINT IS EXCAVATED

With each stroke of my tool I was forced to use my hands to free it of the clay which clung to it. All of a sudden my hand closed convulsively on a hard body and, before even wiping off the clay mass which enveloped it, my fingers informed me that I held one of those carved flints which cause the uninformed to smile, but which are a priceless clue for the archeologist.

This simple, shapeless bit of flint, hardly suggestive of anything definite, but incontestably fashioned and used by a human being, proved beyond doubt that primitive man had once frequented this deep cavern. My anticipations of the year before, born of the finding of the bison's tooth, were now realized, just as my first supposition concerning the existence of a subterranean stream had been confirmed in 1922.

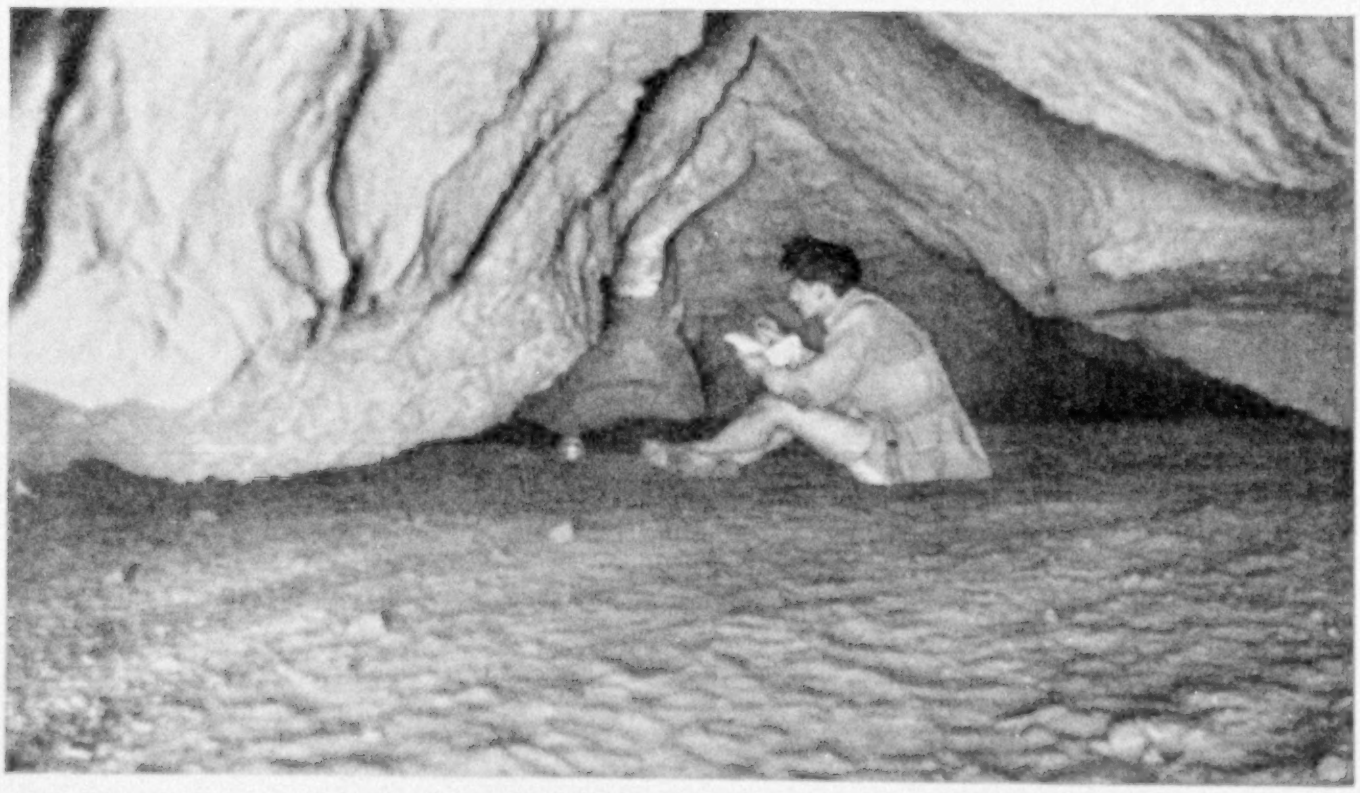
But this discovery, so keenly anticipated, gave birth to other thoughts, and I was impressed more than ever with the resemblance between the Grotto of Montespan and that of Tuc d'Audoubert.

In the study of prehistory it is a well-established fact that the cave man lived by preference in small, shallow caves or at the very entrance of larger caverns. But they also frequented the innermost depths of underground labyrinths, and although those are exceptions, it is usually in the most inaccessible grottoes that prehistoric carvings and paintings are found.

It would seem that some magic or religious rite caused the primitive artists to carve or paint, far from the light of day and from profane view, the curious designs used in various ceremonies.

By what motive was man actuated when he sought out in such a way the profundities of obscure caves? One does not know. But what is certain is that this feat involved the idea of mystery and ceremonies, the clue to which is often furnished by the prehistoric designs themselves.

XUM



Photograph from Norbert Casteret

THE BROTHER OF THE DISCOVERER OF THE MONTESPAN SCULPTURES COPYING THE WALL ENGRAVINGS IN THE DRY GALLERY

The two Casterets and their friends dug a canal last summer to carry off some of the water and make the approach to the cavern easier.

That is why the discovery of a single cut flint several hundred yards underground was of such great importance. Once in possession of this proof of the former presence of man in this remote gallery, I rose and inspected the walls by the light of my candle, in search of such wall carvings as seemed to me should exist there.

A STATUE 20,000 YEARS OLD COMES TO LIGHT

During this time Godin, himself intrigued, had seized the pick and continued the digging. It was then that I stopped suddenly in front of a clay statue of a bear which up to that moment had been hidden from me because of the weakness of the light, for in great caverns the flickering gleam of a candle is like that of a glowworm amid the shadows of a dark forest.

The statue, modeled at least 20,000 years ago, which had rested there unchanged in spite of the passage of the centuries, stupefied me (see illustrations, pages 141 and 142; also text, page 149).

At my call, Godin crept to my side; but his eye, less practiced, could only see a shapeless form where I pointed out to him the outlines of an animal. Then, one after another, as fast as I discovered them, I pointed out to him some horses modeled in relief, two large lions or tigers modeled in clay, and various sketches.

Then he submitted to the evidence, and for more than an hour one discovery followed another. On all sides, carvings of animals, sketches, and mystic signs sprang to our gaze. The day had been successful beyond our fondest hopes.

The following day, having notified Count Bégouen, I undertook alone a new period of research. At the same time an instructor from a neighboring village, impatient to see my discovery, but dreading the passage of the siphon, armed himself with a pick and cleared the outlet of the grotto, so as to increase the flow of the stream and lower its level.

On August 26, the work begun by the teacher, Cazedessus, and continued by my brother Martial and my friends Dupeyron and Godin and the Abbé Moura, curé of the village, produced a satisfactory result, for the first siphon was freed of water. One could thenceforth pass into the grotto without diving, but by subject-

Photograph by Maynard Owen Williams

MISTLETOE GROWING NEAR THE GROTTO OF MONTESPAN

The château and town of Montespan are seen in the background.

ing oneself to a purifying bath of nearly 200 yards.

FIFTY CARVINGS AND THIRTY CLAY STATUES FOUND

The prehistoric remains could now be studied in greater detail.

It was found that the mural carvings and clay statues of this grotto date from the beginning of the Magdalenian Epoch, or Age of the Reindeer, and according to the chronology scientifically established by Dr. Henry Fairfield Osborn, President of the American Museum of Natural History, they carry us back at least 20,000 years.

This prehistoric gallery contains 50 different carvings of animals, of which some are extinct or have entirely left the Pyrenees, deeply cut in the crystalline limestone of the walls with flint tools (see page 143). Clay modeling is represented by 30 specimens, ranging between true statues, more than three feet in length, and little high reliefs, badly damaged by the dripping water.

These clay models form the most important part of the discovery, for up to this time the two clay bisons found by Count Bégouen in 1912, in the Grotto of Tuc d'Audoubert, were the only known specimens of prehistoric clay modeling.

Throughout this account one has noticed the influence which the Grotto of Tuc d'Audoubert had in forming my conjectures concerning the Grotto of Montespan. Is it not strange to note that the similarity of these two grottoes extends even to their being the only two grottoes known in the entire world which hold statues dating from prehistoric times?

Leaving the bed of the underground stream at the huge pillar which obstructs it, and with which the reader is already familiar, one enters the dry gallery (see page 144), where there immediately begins the long procession of tracings dating from the Reindeer Age.

Following the left wall, one finds on a ledge a horse's incisor tooth. Beside it, in a small natural recess, there is the skeleton of a small serpent.

Some yards farther on, there is a group of lines cut in the rock whose significance is not known, but immediately afterwards the eye lights with wonder before the

Photograph by Maynard Owen Williams

A ROADSIDE VIEW NORTH OF MONTESPAN VILLAGE, NEAR THE BRIDGE THAT LEADS TO LABARTHE-INARD

deeply carved figure of a bearded horse with heavy features and upright mane.

A BEAR'S FOOTPRINT FOUND IN THE ROCK

Many other designs must once have existed in this part of the gallery, but the walls have been entirely sheathed in deposits left by dripping water charged with lime. However, one can still see a heavy footprint of a cave bear whose five claws have deeply marked a once soft wall since hardened by limestone deposits.

After having passed this region, where the deposits have destroyed the carvings for all time, one discovers bare walls where the taste of the primitive artist was given free rein.

Two horses, deeply engraved but lacking heads, show corpulent bodies. One of them, whose belly is unusually distended, has carved on its flank a human hand. One can see in this sign a symbol of man's domination over the animal world—a sort of magic charm.

Exaggeration of the size of the animal's body suggests a pregnant mare. Hence one may believe that the desire of the artist (probably a sorcerer) was to

Photograph by Maynard Owen Williams

A MONTESPAN DWELLING, BARN, SMOKEHOUSE, AND YARD

foster, through magic, the reproduction of the species of horse, which at that time constituted the most savory and harmless game.

Above these two animals there is the head of a wild goat, and above, in the midst of mysterious and inexplicable signs, which roughly resemble cuneiform inscriptions, there is a curious human profile, round-headed, strong-nosed, with a wide-open eye, lidless and quite round, and a short beard.

Farther on, at the left, a clutter of clay has partly obstructed the gallery. This pile of débris has slid down through a crack in the roof. On the slope of this pile are numerous traces of footprints of bears and human beings, as well as fragments of carved flints. At the side, one of these flints has been fixed in the vertical wall with the aid of some clay, and another flint, shaped in the form of a double-edged scraper of the Magdalenian type, is placed on a projection of rock, where it is held by a bit of stalagmite.

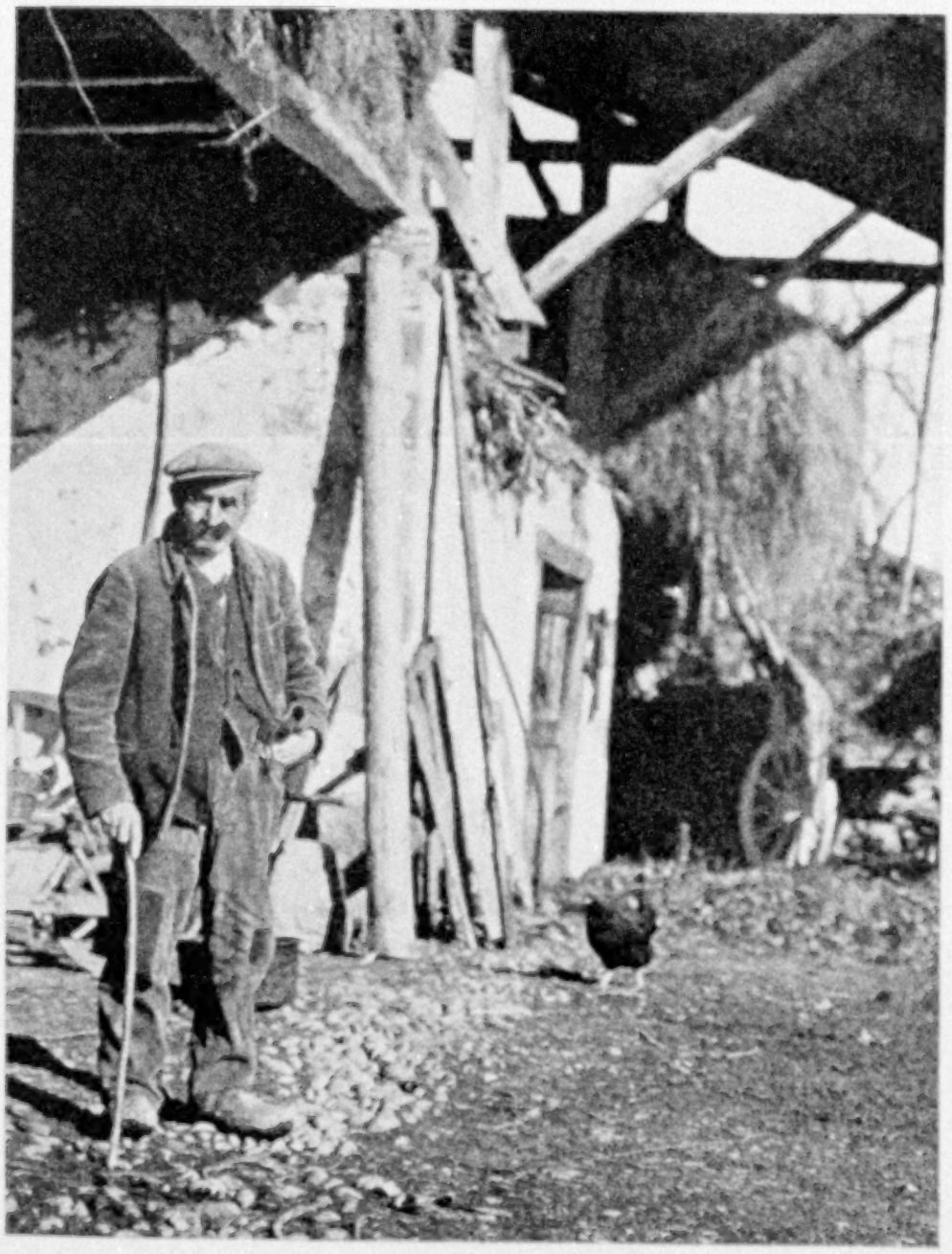
One notices also, in a region where the wall is partly of clay, traces of fingers, the imprints of hands which had previously dug away the clay, and a curious little dome in the wall itself. All is covered over and hardened by a film of calcite.

On the opposite wall a vertical crack in the rock has been covered over with clay, into which some one poked holes either with the fingers or with a stick. In fact, at each step one confirms the fact that the Magdalenians dug away clay at the base of the walls with their hands; that they traced there more or less complicated designs, dug holes, and fixed flints in position.

BEARS AND MEN MUST HAVE FOUGHT IN THESE CAVES

All these small works, whose complete significance escapes us, have been partly spoiled by bears scratching against the walls with their claws. The superposition of claw-marks over human traces, and *vice versa,* shows that there was contemporary habitation by men and these wild beasts.

One cannot think without trembling of the savage battles which must have taken place in these shadowy depths or fail to admire the courage of our remote ancestors, who here risked their lives, aided



Photograph by Maynard Owen Williams

A FARMER OF MONTESPAN

only by stone weapons and lances carried into the haunts of wild beasts by the dim light of smoking torches.

Going still farther into the gallery, one passes before another pile of clay and a big colonnade. On a horizontal bank of earth are some hand-molded balls, of which one is a feminine symbol quite like those which one sees represented in designs dating from the Reindeer Age.

Opposite, at the height of a man, a small horse head in clay has been attached to the rocky wall by the pressure of the palm of a hand against the neck and shoulders. The eyes, mouth, and ears are indicated. Above, on the ceiling, one is intrigued by a mass of clay which has been squeezed into a crevice and still bears a large number of fingerprints indented like the cells of a hornet's nest.

At a turn in the gallery, one is surprised to find the earth cumbered with large masses of clay, these being three large statues of feline beasts—lions or tigers—once propped up on a bank of earth and now partly demolished. They measure 5 feet 3 inches in length and 3 feet 3 inches in height, and are placed one behind the other. The foremost specimen is the best preserved. One can identify the hind feet, the breast, shoulders, and neck. The head is broken off and lies between the front paws.

At the hind quarters the end of the croup remains, as also the beginning of the tail, the lower part of the back feet, and the end of the tail. All of the missing parts have fallen to the floor and still lie there in pieces.

The second and third felines have been still more badly treated by time, and only the outlines appear, permitting one to suppose that they represented the same type of animal. They are modeled in high relief, with a maximum thickness of 1 foot 4 inches.

CRUDE STATUES FORM UNIQUE SCIENTIFIC DOCUMENT

Although crudely executed, the little that remains of these statues leaves no question as to the type of animal the artist wished to represent. The paws are strong, knees low, and breast compact—without question lions or tigers.

These modelings constitute a scientific document almost unique, and certain very

apparent features have unusual interest. The neck and breast of the first tiger are literally riddled with lance thrusts! One can even ask himself if the head of the animal was not destroyed in this manner.

On the bank which supports the tigers one can discern molded balls, flint implements, and bits of bone. Opposite, on the wall, amid a network of lines and cross-lines traced in the clay with the fingers, is a large drawing of a mammoth.

A horizontal crack many yards in length has been filled up with clay, which has subsequently been pierced with numbers of equidistant holes. In this niche there was found a spatula of polished bone which certainly was not foreign to the modeling of the tiger statues.

Photograph by Maynard Owen Williams

THIS GIRL OF MONTESPAN IS A GOOD CYCLIST DESPITE HER WOODEN SHOES

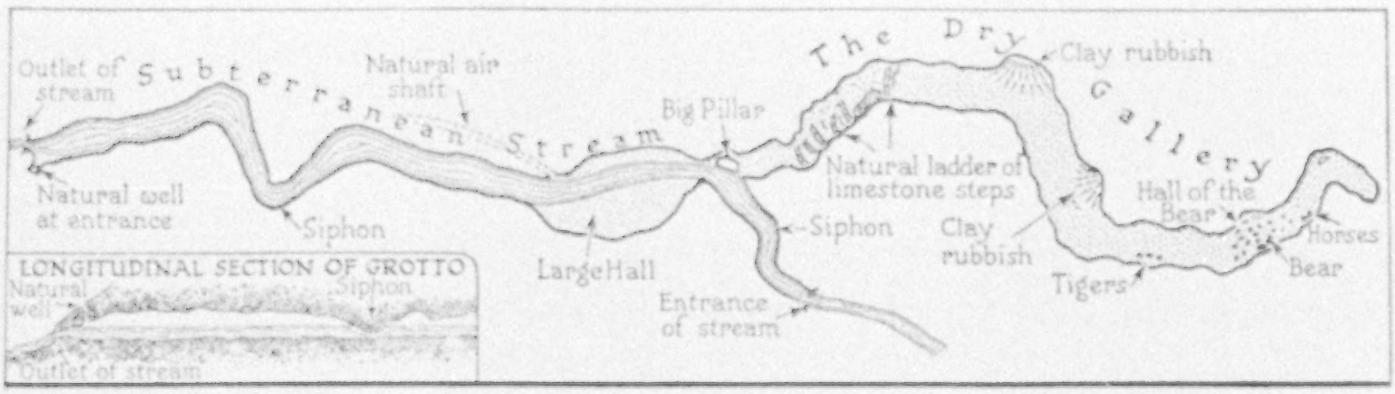
Advancing still further in this corridor, where the weakness of my light had not permitted me to see these things at first, one arrives at a hole where I made the excavations to which I owed the shaped flint and which led to my discovery of the carvings and statues.

This broadened section of the gallery, which is now called the Hall of the Bear, is the most interesting part of the whole grotto.

Within a radius of 30 feet there is a veritable museum of prehistory whose masterpiece is the clay statue which represents a bear lying in the same position as that of the great Sphinx of Egypt (see pages 141 and 142).

As in the case of the tigers, it faces toward the outlet of the grotto and stands about a yard away from the right-hand wall, on a small platform prepared for it. The statue is heavy-bodied, like the animal it represents. The strong croup is quite round. The back paws, hidden under the body, are not represented. The right-hand front paw is stretched forward, each of the five claws being well defined. Finally, the statue has no head and, indeed, seems never to have had one, for the stump of the neck is finished off like the rest of the body and there is no trace of a part having been broken away, as in the case of the tigers.

This bear has also suffered from numerous mutilations, for it is scarred by 30 or more blows from lance or arrow; but, thanks to its mass and its broad base, it



Drawn by Chas. E. Riddiford from M. Casteret's Sketch

COURSE OF THE SUBTERRANEAN STREAM GIVING ACCESS TO THE GROTTO OF MONTESPAN, WHICH CONTAINS THE OLDEST STATUES YET DISCOVERED BY MAN

The distance between the point where the subterranean stream enters the earth and its outlet (at the extreme left) is approximately three-quarters of a mile.

has survived these mysterious onslaughts (see text, pages 151 and 152).

It has suffered also from dripping water, whose only effect has been to cover it with a thin armor made up of large flakes of calcite, which give pleasing and convincing proof of its great antiquity.

STATUE SHEATHED IN CALCITE

Between the front paws lies the skull of a bear, which has led expert prehistorians to interesting conclusions, which will be discussed later, along with the interpretation of the numerous wounds on the statues and of all that this curious grotto holds.

A yard behind the bear a horse is deeply carved in the clayey earth. The whole floor of this hall is embossed with 25 clay models from a foot to a foot and a half long and from 4 to 6 inches in thickness. These modelings are for the most part nibbled and sucked away by the waters of ages, and would be meaningless if some of them did not show forms less worn, which one can identify as horses.

Amid these remains of clay models one can distinguish certain depressions with clear-cut edges—the holes from which was taken the clay used in constructing the bear and the horses. One of these basins, deeper than the rest, still shows on its walls the marks of a flint by means of which it was dug.

Before leaving this little hall, let us note that on the very low ceiling there are carved two horses and a bison, and that two black signs are painted above the statue of the bear. Lastly, there was found a carved flint, hidden in a ledge of rock.

MANY ANIMALS LABORIOUSLY CARVED ON ROOF OF PASSAGE

After the Hall of the Bear, the gallery extends for another 100 or more feet, but always with the ceiling nearer and nearer the floor, so that one is obliged to crawl.

This tortuous intestine nevertheless had its attraction for Magdalenian man, for it is here that one sees most of the carvings. On the roof of this sloping passage have been carved—at the price of patient toil, in unbelievable positions—the principal animals of the Reindeer Age: horse, bison, stag, reindeer, hind, hemione (a species of wild ass), hyena, Pyrenean chamois, and ibex. All of these animals are pictured with much skill and evidence of real talent.

Certain details are worthy of mention. In carving the form of a horse, the artist made use of a rocky ridge which forms a natural backbone for his sculpture. An ibex head is carved about a small oval pebble caught in the rock, which thus becomes the eye of the animal.

Two horses' heads, carved side by side, reveal such different characteristics that there is no doubt of the artist's intention to represent two widely different species.

One of these horses has a heavy head with prehensile lips, an erect mane, and a heavy beard, while the other has a delicately shaped head, no beard, and only a light mane. A little clay swallow's nest, looking like a mere pellet of earth, has been attached to one wall.

Photograph by Maynard Owen Williams

THE THIRTEENTH CENTURY CHÂTEAU OF MONTESPAN

Most of the ruins here seen, including the cylindrical and square donjons, were added in the fifteenth century. All this and the plateau on which it stands were recently sold for $150.

In a very low passage the wall has been ribbed with small stalactites, which are still piled up in heaps on the ground at this point.

Finally, one must note that many of the animals are represented as wounded.

Traces of paintings are both rare and insignificant, though there are two designs in black above the bear, and on the roof, here and there, are red spots, while a bison is decorated with a club-shaped red mark. The paint was provided for prehistoric man by iron oxides and natural dioxides of manganese mixed with water or animal fats.

BONES OF MANY ANIMALS FOUND

I was able to collect and identify in this gallery bones of horse, bison, bear, reindeer, and snake. The soil of the large gallery, which one passes through in mounting the bed of the stream before arriving at the prehistoric gallery, contains human remains, among which I found an elbow bone.

A small air passage which opens in the roof of this hall also contains some teeth, bones, and countless claw marks of bears. It seems certain that this passage was once easy of access, but since landslides have occurred in the vault it has become difficult of approach.

In short, all the rest of the subterranean stream bed, which is guarded by the second siphon, or a traverse two-thirds of a mile long, shows on the walls, beyond reach, innumerable claw marks made by bears. It is not, then, impossible that this part of the grotto still contains mural carvings which have hitherto escaped my notice.

OFFICIAL VISITS AND THE OPINIONS OF SAVANTS

I have mentioned the fact that in the month of September, 1923, the picks of

my friends made the grotto more accessible. It was at this time that the prehistoric gallery of Montespan, which is now classed as a national monument, was visited by eminent savants, to whom I had the honor of showing it.

Moreover, these learned men did not hesitate to go up the course of this subterranean stream with the water up to their chests.

THEORY OF PREHISTORIC MAGIC ACCOUNTS FOR WOUNDS IN ANIMAL STATUES

From an examination of the carvings and sculptures of Montespan, it is evident that this was once one of those sacred caves where the sorcerers of the tribes of hunters belonging to the Reindeer Age gave themselves over to magic ceremonies.

In a masterly study, Count Bégouen has compared the clay figures of Tuc d'Audoubert with those of Montespan. According to his belief, Magdalenian men, primarily hunters, sought to favor the outcome of future hunts by magic ceremonies, concerning which the evidence becomes more definite as discoveries of prehistoric remains are made.

Without danger of grave error, one can now advance the theory that our remote ancestors sought out the deepest and most inaccessible grottoes in which to carve or model images of the animals which it was their custom to hunt, and there, amid mysterious ceremonies, wrought wounds upon these animal forms, killing them in effigy so as to assure the capture of the animal thus bewitched when the day of actual hunting arrived.

Thus may one explain the deep marks left on many of the animal images of Montespan. The theory seems especially sound when one studies the tigers and bear modeled in clay which have crumbled away under the impact of lances and arrows, always skillfully directed at some vital spot (see text, page 149).

This theory is still further strengthened by the interpretation of the meaning of the bear's skull found at the foot of the headless clay statue (see text, page 150). To give more importance to the magical ceremony and in order that the double of the bear should resemble as closely as possible its living counterpart, the Magdalenian sorcerers had placed upon this model a natural bear's head.

In fact, there is, in the part of the neck which is represented by clay, a hole which very evidently was made by the wooden peg supporting the actual head. It is reasonable to think that an entire bear-skin once covered the figure, and that it was against this clay dummy that sham battles were staged.

It is interesting to note that only wild and dangerous animals have thus been cursed by witchcraft at Montespan, while the clay figures of horses show no marks of conflict.

If the Magdalenians believed that they could exert an occult influence tending toward the destruction of dangerous beasts, it is reasonable to think that they also believed that they could foster the propagation and promote the fertility of such animals as formed their food, just as they laid a curse against the animals they feared.

That is why the bisons of Tuc d'Audoubert (both male and female) are free from all marks of attack, just as are the horses of Montespan, and especially the pregnant mare, which bears upon her flank the sign of a human hand, symbol of man's domination and will.

As for the numerous small bits of clay modeling which are found almost everywhere on the walls—flanges, holes, networks of lines, and cells like those of a hornet's nest—nothing so far enables us to attribute to them any certain meaning.

The Pyrenees, as one may see, are a favored region for the study of prehistory, for from the bits of quartzite crudely worked and dating from the Chellean Epoch, which one finds in the alluvial soil of our valleys, to the appearance of metals, one can follow all the long chronology of the old Stone Age.

The discovery of the Grotto of Montespan and of the prehistoric works of art which it contains has richly rewarded me for the difficult and at times dangerous exploration made in many caverns.

Without doubt, our mountains still hold unexplored caves which promise sensational and unexpected discoveries to those seekers after truth who have undertaken to wrest from the remote past those secrets of man's origin which it so jealously guards.

ADVENTUROUS SONS OF CÁDIZ

By Harriet Chalmers Adams

Author of "A Longitudinal Journey Through Chile," "Rio de Janeiro, in the Land of Lure," "Volcano-Girded Salvador," etc., in the National Geographic Magazine

FROM one little town alone, on the crescent shore of Algeciras Bay in southern Spain, 4,000 sturdy sons of Cádiz have emigrated to America.

"In New York we are contented and prosperous," one of them told me. "We have our own little community, with Spanish music and dances, cafés, and barber shops. Here our children have a better chance than we had in Spain."

Thrifty, law-abiding, and of moderate habits are these transplanted Andalusians; yet there is a dash of the adventurous spirit of Old Spain in their blood. The ocean, lapping New World shores, lured them. As in centuries past, its incessant voice urged the sons of Cádiz overseas.

Geographically and historically the term "adventurous" may well be applied to Cádiz itself, southernmost province of Spain. A peninsula, at the tip end of the greater Iberian Peninsula, its face is turned toward Africa and the open sea. With right foot firmly set in the Atlantic, and left just dipping into the Mediterranean, its arms are stretched toward Morocco, whose rugged hills tower skyward across Gibraltar's Strait. Tarifa, its farthest south, is the most southerly point in Europe (see map, page 126).

Its tawny shores have served as stepping-stones for those migrations, pre-Phœnician to Moslem, which have left an indelible imprint on this part of the world.

A MOVING PICTURE OF CÁDIZ HISTORY

In the landlocked harbor of Old Cádiz City, high-prowed craft of Tyrian traders, earliest voyagers into the unknown Atlantic, came to anchor. Here Greek sculptors wrought and the legions of Hannibal battled. Here Romans and Vandals, Visigoths and Moslems ruled, each in turn.

From Cádiz waters sailed most of the Spanish *conquistadores* to the conquest of the Americas. Here galleons, laden with the loot of the Incas, furled their sea-torn sails.

I would create, if I could, a moving picture of the outstanding happenings in Cádiz province. In it there would be hairy Celtic-Iberians clad in skins, and hook-nosed Phœnicians bartering Eastern goods for gold and silver. There would be a gigantic Semitic priest in flowing robes, with rings on his toes, offering sacrifice to the cruel gods of Sidon; and an eagle-eyed, curly-bearded commander of the fleet of King Solomon bringing the first of the wandering Jews into the port of Tarshish.

Hamilcar and Hannibal, the conquering Carthaginians, and many a mighty Roman general would be in the cast. So would Roderic, last king of the Visigoths, and Tarik-Ibn-Zeyad, the invading Berber chief.

Alfonso the Wise would be there wresting Cádiz from the Moslems, and Guzmán the Good nobly defending the Castle of Tarifa. Columbus and Ojeda, Ponce de León and Magellan would have star rôles.

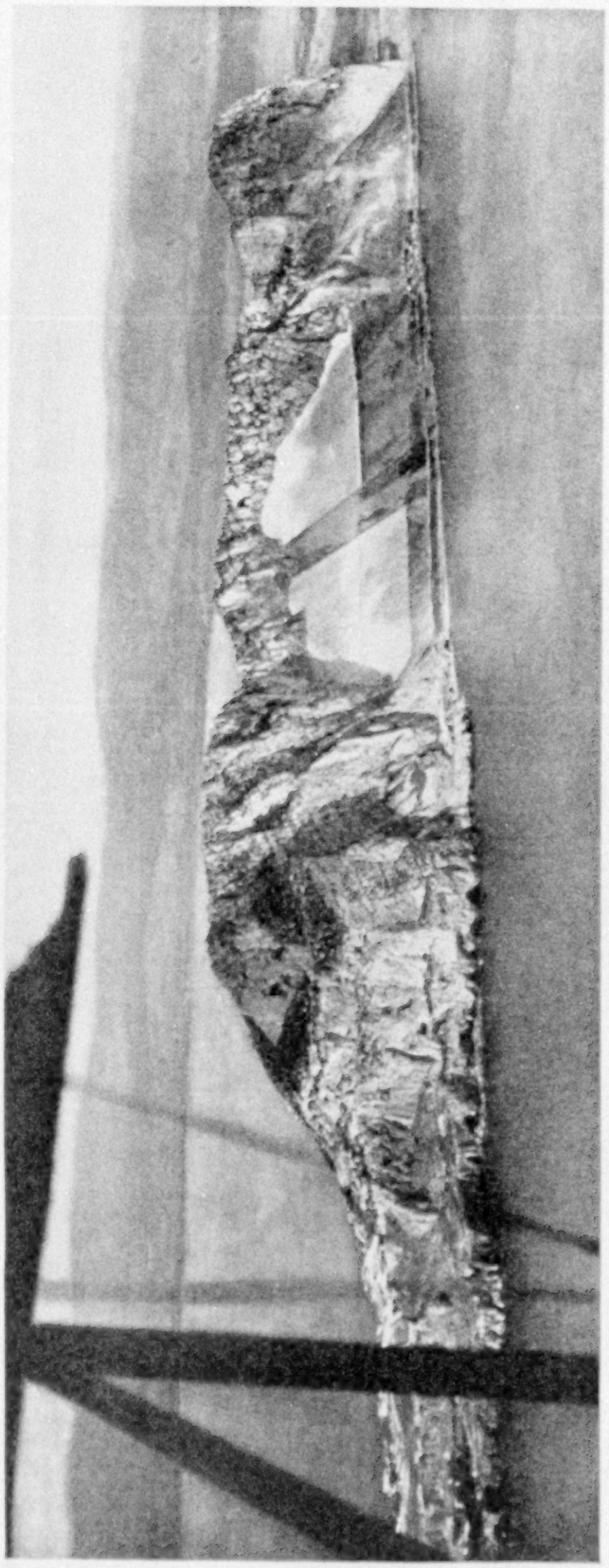
Perhaps the greatest thrill would come with the arrival of Sebastian del Cano, that intrepid young Basque pilot, bringing the battered little *Victoria* into San Lúcar harbor, first of all ships to sail round the world!

Drake and his privateers! Nelson off Trafalgar! Albuquerque holding out against the army of Napoleon! Wellington lifting the siege!

Warriors, adventurers, conquistadores—how they would throng the screen!

Tyrian temples and Carthaginian battling towers, Roman villas and Moorish mosques, thirteenth-century castles and crenelated walls, would be architectural features. Corsairs and galley slaves, gypsies and smugglers, dancing girls and *hidalgos*, would lend local color.

Recently I made a second visit to Cádiz, not only to gain a more comprehensive knowledge of the storied old capital of the province, but to journey across country from the cork woods of Algeciras to the vineyards and stock farms of Jerez.



THE EASTERN SIDE OF GIBRALTAR SEEN FROM AN AIRPLANE

Photograph by M. Flandrin

The great sheets of galvanized iron covering the middle slopes are for the purpose of catching rainwater, which runs down channels into tanks. Lack of water is one of the drawbacks to Gibraltar as a fortress. Spain is seen in the background.

In my heart I knew that the greatest of the lures which brought me once more to Spain was the forgotten port of San Lúcar de Barrameda, at the mouth of the Guadalquivir River. I longed to stand on that very shore from which had sailed so many of those valiant sixteenth-century adventurers whose New World trail I had crossed.

THE ENTRANCE TO SOUTHERN SPAIN

American travelers usually enter southern Spain through the port of Algeciras, in the bay the Spaniards call "Algeciras" and the Britons "Gibraltar." Here they board the Andaluces Railway for Ronda (see page 228) and Granada (see page 225), Seville (Sevilla), Cordova, (Córdoba), or Madrid.

Cádiz province to them means only this one hilly town of stone-paved streets and one- or two-story white buildings with roofs of ocher-colored tiles. They have a splendid view across the bay of the Rock of Gibraltar, a glimpse of the tourist hotel, and perhaps they visit the town hall where, in 1906, was held the International Conference on Morocco which determined the scope of European interests in North Africa.

British visitors more often linger here, and, sharing the interests of their Gibraltar countrymen, come to know the alluring shore between Algeciras and the strip of land, 1,500 yards in

Photograph from Harriet Chalmers Adams

LOOKING FROM THE ROCK OF GIBRALTAR TOWARD THE MAINLAND

In the distance, stretching across the peninsula, is La Linea de la Concepción, a town of some 33,000 inhabitants. Between La Linea and the dark wooded area of the middle distance lies the strip of Neutral Ground. In the lower left corner is the site of the ancient Phœnician town of Carteia.

Photograph by Emil P. Albrecht

A STREET IN GIBRALTAR

Many of the thoroughfares of the great stronghold resemble stairways rather than streets. Most of the work about the harbor and fortifications is done by Spaniards from the mainland. Those living in La Linea, beyond the Neutral Ground, must be out of British territory before the sunset gun is fired.

length, known as the "Neutral Ground," which connects Spanish territory with the great gray "Pillar of the British Empire" (see text, page 229, and illustration, page 159).

The Gibraltar golf links, polo grounds, and race track are on Spanish soil. So, too, is the course—woods, coverts, crags, and cultivated fields—of the Royal Calpe Hunt of Gibraltar, of which Alfonso XIII, an ardent sportsman, is patron.

The Spanish farmer believes the scarlet-coated *Ingleses* to be quite mad, going to such trouble and expense, with so many horses, hounds, and horns, to rid the country of these insignificant foxes, which could be exterminated by a few pot shots.

La Linea de la Concepción, the home town of my New York Spaniards, adjoins the Neutral Ground. It covers the narrow tongue of land between the Mediterranean Sea and Algeciras Bay (see illustration, page 155).

Viewed from the heights, the town seems about to float away. Its population includes more than 4,000 Gibraltarians exiled from the Rock, owing to scarcity of homes and high rentals. Spanish laborers who flocked here during the erection of the Gibraltar dockyards have remained to work at the British coaling station.

During the annual July Fair, which lasts a week, thousands of spectators from "Gib" and near-by Spanish and Moroccan towns gather in La Linea to attend the bullfight. The most daring *espadas*, as well as the finest bulls, are Audalusian bred. Early spring to early autumn is the bullfight season all over Spain.

YOUNG SPAIN TURNS TO FOOTBALL

Young Spain, especially in the north, has taken to football. The changing tide of interest is illustrated by a father and son I met in Cádiz. The father asked if I had ever seen a toreador of Marques, his favorite bullfighter, "the greatest in Spain." The son inquired about "fútbol" in America and proudly exhibited his new striped sweater.

The Madrid weeklies are filled with enthusiastic accounts of recent games and photographs of football teams. Slowly

Photograph by courtesy of Lignes Aériennes Latécoère

AN AËRIAL VIEW OF GIBRALTAR FROM THE NORTH: THE AFRICAN COAST CAN BE SEEN IN THE BACKGROUND

but surely the national sport of bullfighting is losing ground.

The live topic around Algeciras Bay is cork. This one province of Cádiz yields nearly one-tenth of all the cork produced in the world, 90,000 acres being covered with cork oaks. There are five distinct forests of the gnarled old trees, with their grayish-green foliage.

In Spain, Portugal, France, Algeria, and Morocco I have seen the cork woods. Moroccan cork is as yet little exploited. In Spain this is an ancient industry.

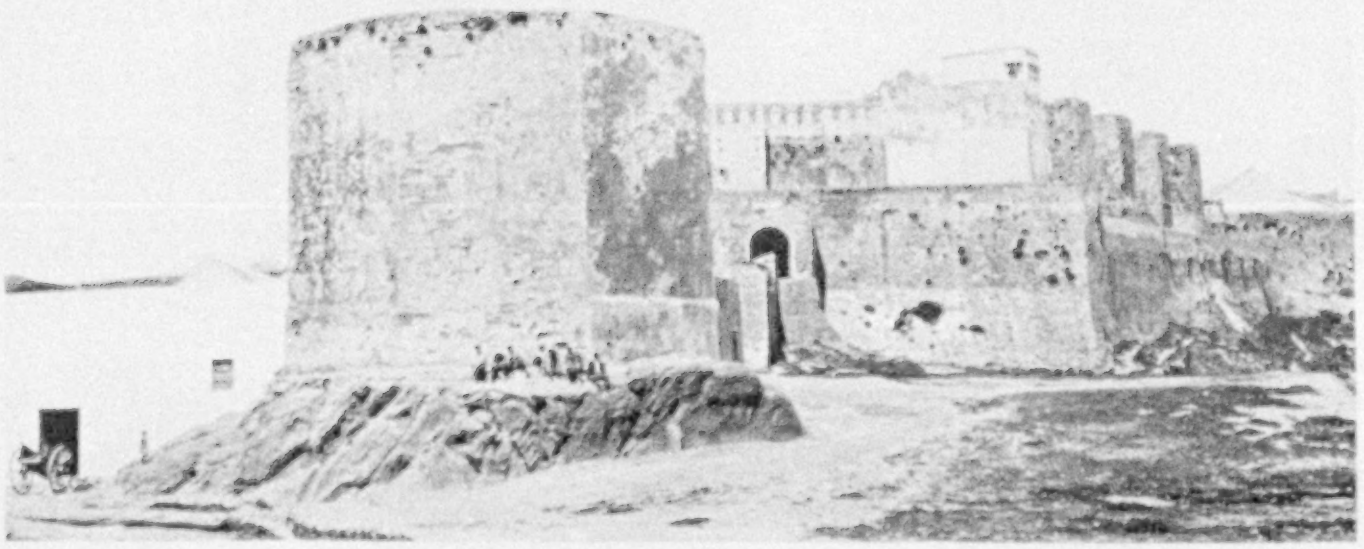
The most important of the four companies operating in Algeciras is American, with headquarters in Pittsburgh. Another big American company operates in northeastern Spain. The United States imports millions of dollars worth of cork annually for the manufacture of widely varied products. Prohibition does not seem to have affected the American cork trade.

The American company in Algeciras buys through middlemen, who obtain the cork from crown lands or from the forests owned by the Duke of Medinaceli, one of the grandees of Andalusia.

The trees yield when about twenty years old and are barked every nine years. The forest is divided into nine sections, the cork-cutters working in one section only during May and June of each year.

In Algeciras Harbor I saw American Shipping Board and Italian vessels loading slabs of crude cork and manufactured corkboard for the States.

The thickness of the cork slab is determined by rainfall and quality of soil. Those shipped vary from three-fourths of an inch to two and a half inches in



Photograph by Mastin Simpson

THESE OLD WALLS AND TOWERS OF TARIFA WERE BUILT DURING THE MOORISH EPOCH

The ruin of the Guzman Castle standing within the walls is as historic as it is picturesque. Before these towers besiegers in 1296 brought the son of Alonso Perez de Guzmán, surnamed the Good, and offered the boy in exchange for the city. In reply Don Alonso drew his dagger and threw it down to the enemy. His son was murdered before his eyes, but the city was saved.

Photograph by Angel Rubio

THE STRAIT OF GIBRALTAR FROM THE SPANISH COAST OF NORTH AFRICA

From Tarifa, the southernmost point of Europe, it is possible to see across the Strait to the northern coast of Africa, dotted here and there by five Moorish watchtowers. There is also a long chain of these towers on the Spanish coast from Huelva to Gerona. In the troublous days of the Barbary corsairs, the news of the enemy's arrival was flashed along this chain for miles (see text, pages 183 and 184).

Photograph by J. Charles O'Brien, Jr.

PASSING BETWEEN THE PILLARS OF HERCULES

This is Europa Point with its light, whose elevation is about 200 feet above the water. From Europa Point to Ceuta, on the African shore, the distance is 12½ miles. The narrowest part of the Strait, between Points Canales and Cires, is only 7¾ miles.

thickness. Corkboard used in cold-storage plants is made from slab cuttings, inferior grades, and waste from small Spanish factories.

Last spring all Spain was in danger of being flooded. The country had not known such a downpour in many years. The thought came to me that, even though the whole world were inundated, the Spanish people, at least, might survive. The yearly cork output is sufficient to fashion a life preserver for every man, woman, and child in the country.

AFRICAN RAILWAYS WILL AID ALGECIRAS

Algeciras has a future. The Tangier-Fez Railway is nearing completion. This means that within a year or two Tangier will be connected by rail with Algiers, Tunis, and the fringe of the Sahara, at Colomb-Béchar, in southern Oran. Eventually the Trans-Saharan Railway will reach Dakar, in Senegal, the nearest point to the South American continent.

A lively imagination can bring the traveler by fast train from Buenos Aires to a Brazilian port opposite Dakar, with a quick jump across the water and express service to Tangier, where a rapid ferry will connect with a through train from Algeciras to Paris.

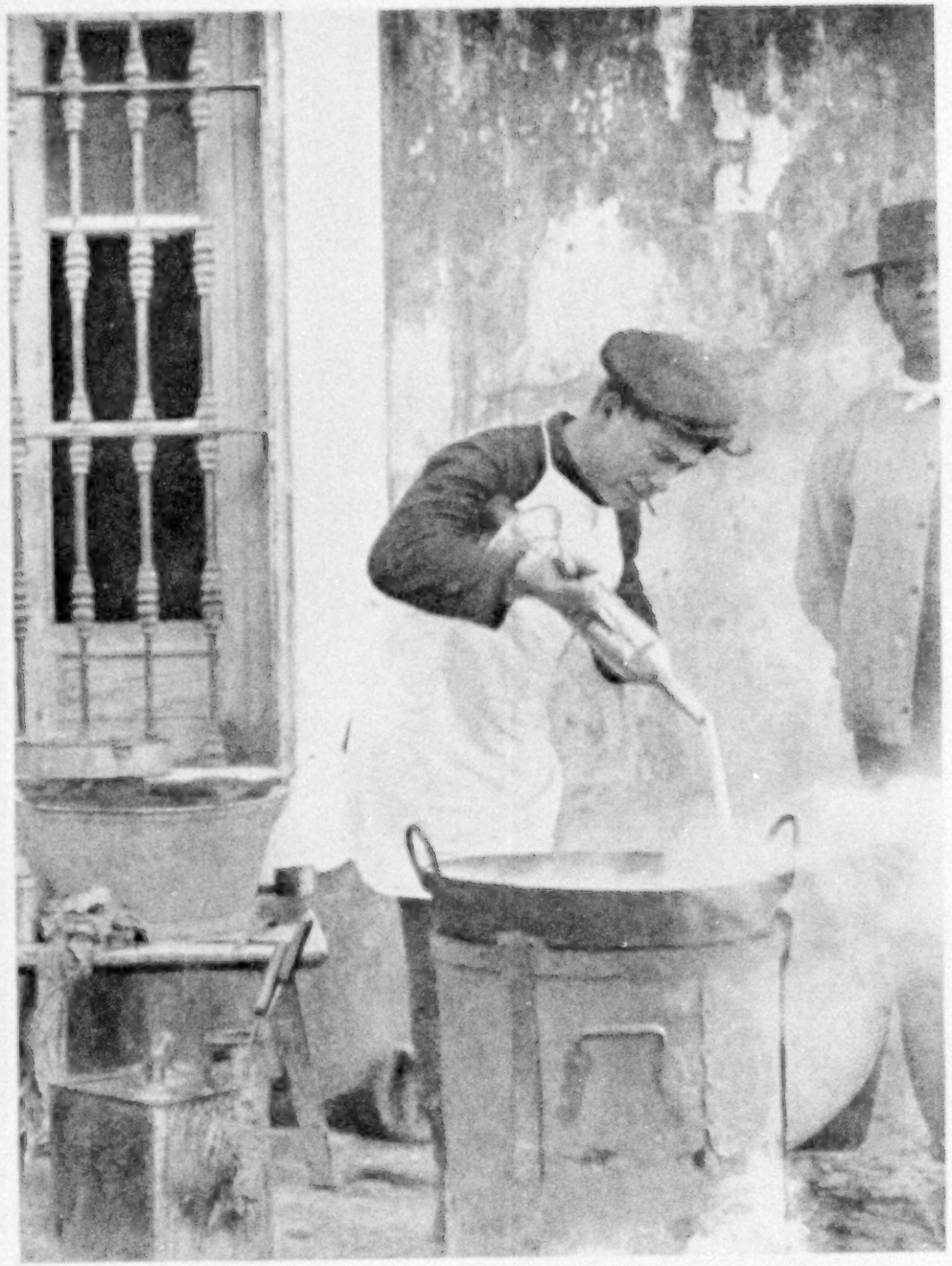
I met a Spanish engineer who discussed the possibility of bridging the Strait of Gibraltar between "Gib" and the Spanish-Moroccan port of Ceuta, just opposite. A service better within my vision is a ferry built to carry the Dakar-Tangier train across to Spain.

Government work, now in progress under Dutch contractors, will lengthen the Algeciras pier to accommodate vessels of 8,000 tons. Now only the Gibraltar ferry can come alongside the pier.

There is daily steamer service between Algeciras and Ceuta, and between Algeciras and Tangier. The fortified town of Ceuta is clearly visible from the Spanish shore, while Tangier, at the northwest corner of Africa, is only three and a half hours away (see page 184).

The tall, dignified Moor, with flowing robe and turbaned head, stockingless feet

THE CARNATION SELLER OF JEREZ



MAKING CRULLERS IN SPAIN

Photographs from Harriet Chalmers Adams

PINES ON THE HIGHWAY BETWEEN ALGECIRAS AND LA LÍNEA

This variety of pine is characteristic of Spain. The roadside wineshop was founded in 1772.

A CORK-STRIPPER AT WORK

The life of a cork tree is from 80 to 150 years. A tree 20 years old will produce 11 pounds of virgin bark.

Photographs from Harriet Chalmers Adams

thrust into heelless yellow slippers, is not an uncommon sight in these towns across the Strait.

Ceuta uses Algeciras as its link with Spain, just as Melilla, its sister fortress to the east, uses Málaga. Last spring both ports were filled with soldiers and munitions *en route* for the Moroccan front for the promised big offensive.

I was in Algeciras the day recruits kissed the flag and swore their allegiance. This impressive ceremony, called *la jura de la bandera*, was celebrated that week throughout Spain. In Madrid it was a most important function, all officialdom being present, including the King and the President of the Military Directorate, mounted, and the Queen, with the Royal Princes, in the reviewing stand.

Spaniards hate the very name of Morocco, or Marruecos, as they call it. I saw Spanish shooting-galleries where wooden figures of fierce black "Moros" take the place of our clay-pipe, leaping-deer, and diving-duck targets. The combat between Christian and Moslem has covered a period of 1,200 years.

STREET SOUNDS OF SOUTHERN SPAIN

In recalling Andalusian towns I hear again those street sounds which are an inseparable part of Spanish life. Sellers of lottery tickets shrill their wares:

"Only three pesetas! Three pesetas! Any pretty number you choose!"

All the horses and mules have their tinkling bells. Along comes the street organ drawn by the patient donkey. Donkey and music-box wear rubber blankets, but the organman grinds away in the rain.

To the lilting Spanish music the children dance. When they are not dancing they are singing. I have never known happier children.

One evening, from my balcony, I saw six little girls, with arms interlocked, trudging up and down the muddy street. They were singing at the top of their lungs. The song finished, I called for another. They took the request seriously.

The new song was about a certain Rosa and the Fair. Every verse had the same refrain. Up to verse 15, Rosa was in difficulty, but by verse 33 the real culprit was discovered and things were working out satisfactorily. By the finale, verse 39, I was quite fatigued, but the little girls were fresh. One of them was barely six, but she knew every word of that song!

Even the uneducated Spaniard is extremely well-mannered. There is some hidden thing about the Spanish tongue which lends grace and gentleness to the humblest.

All classes put themselves out for the stranger. I recall a hundred little kindnesses. If you chance, on the street, to inquire a direction, half the populace accompanies you, to be certain you find the place. In a shop the customers leave their business to attend to yours. It is not curiosity; it is interest.

THE ONCE-THRIVING SMUGGLING INDUSTRY WANES

There is much poverty in southern Spain. Around Algeciras smuggling used to be a profitable trade, but it has been sternly suppressed. The poor peon has not yet come to see that the new military government is working in his interest, and that better days are coming. He keenly resents the strict customs enforcement.

"What are the inspectors looking for?" I asked an old British resident, as a long line of men and women of the working class filed past us into the customhouse from the Gibraltar ferry.

"Tobacco and silk," he answered. "They used to braid the tobacco into long ropes and coil it around their bodies."

The clean, white cotton gloves worn by the officials, who deftly upset my personal belongings at every Spanish customhouse, served as a balm. They wore a smart grayish-green uniform with sword at the belt, and a shiny black cap somewhat the shape of that worn by our coal miners.

Halfway around the bay curve, between Algeciras and La Linea, is the site of Carteia, one of the oldest cities in western Europe. It was one of the first trading posts established by the Phœnicians. To these earliest "commercial travelers" Spain owes its name. "Span," or "Spania," they called it, the "remote," or "hidden," land.

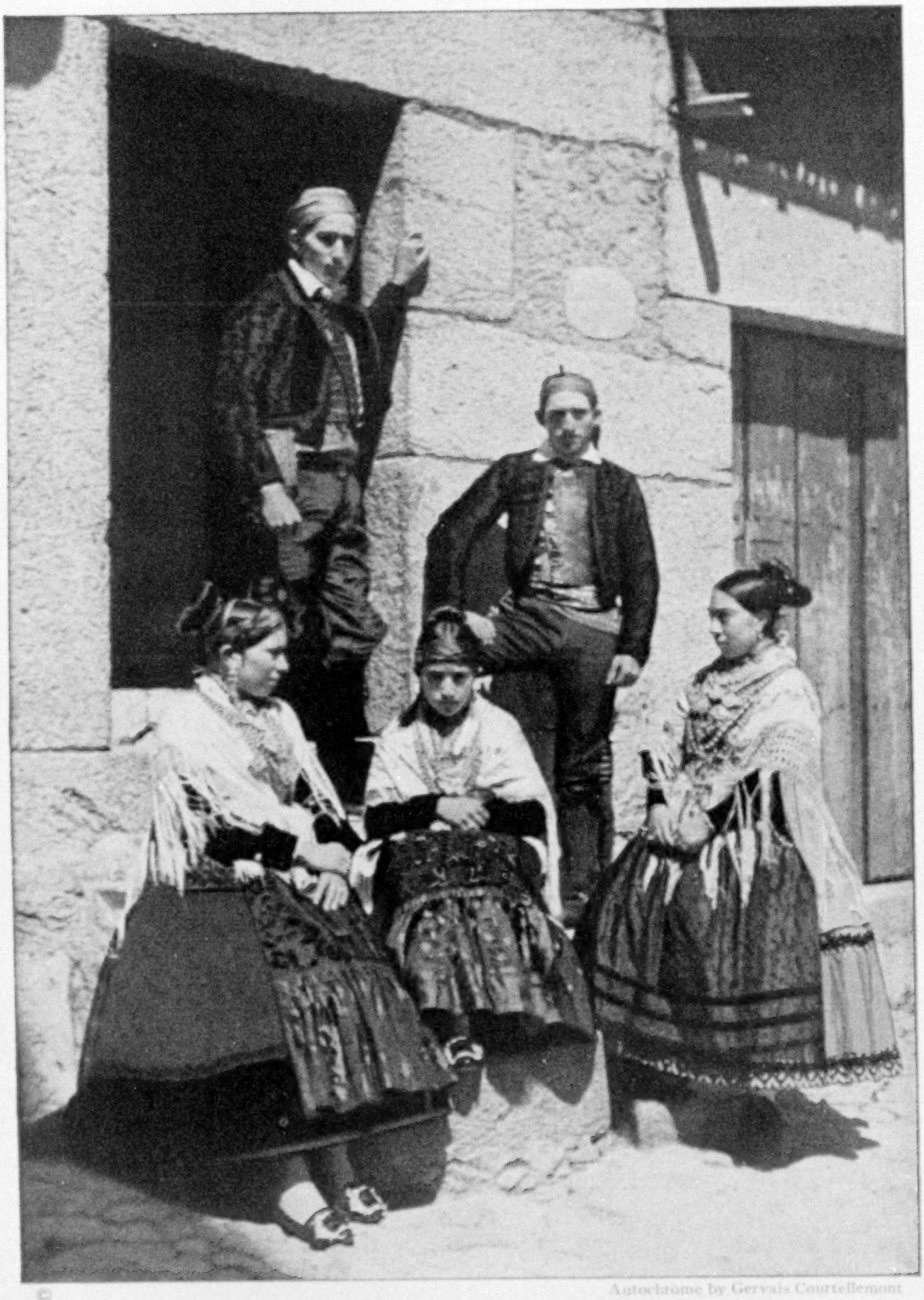
It was some time around 1400 B. C. that the Phœnicians, after planting their

© Autochrome by Gervais Courtellemont

A LAGARTERA BEAUTY IN CEREMONIAL COSTUME

The women of Lagartera, in the Province of Toledo, Spain, wear silk tissue waists and short round skirts, neckcloths embroidered in black, flesh-colored stockings embroidered with colored silks, fancy shoes with very high heels, and many gold and coral ornaments (see Plate VIII).

XUM



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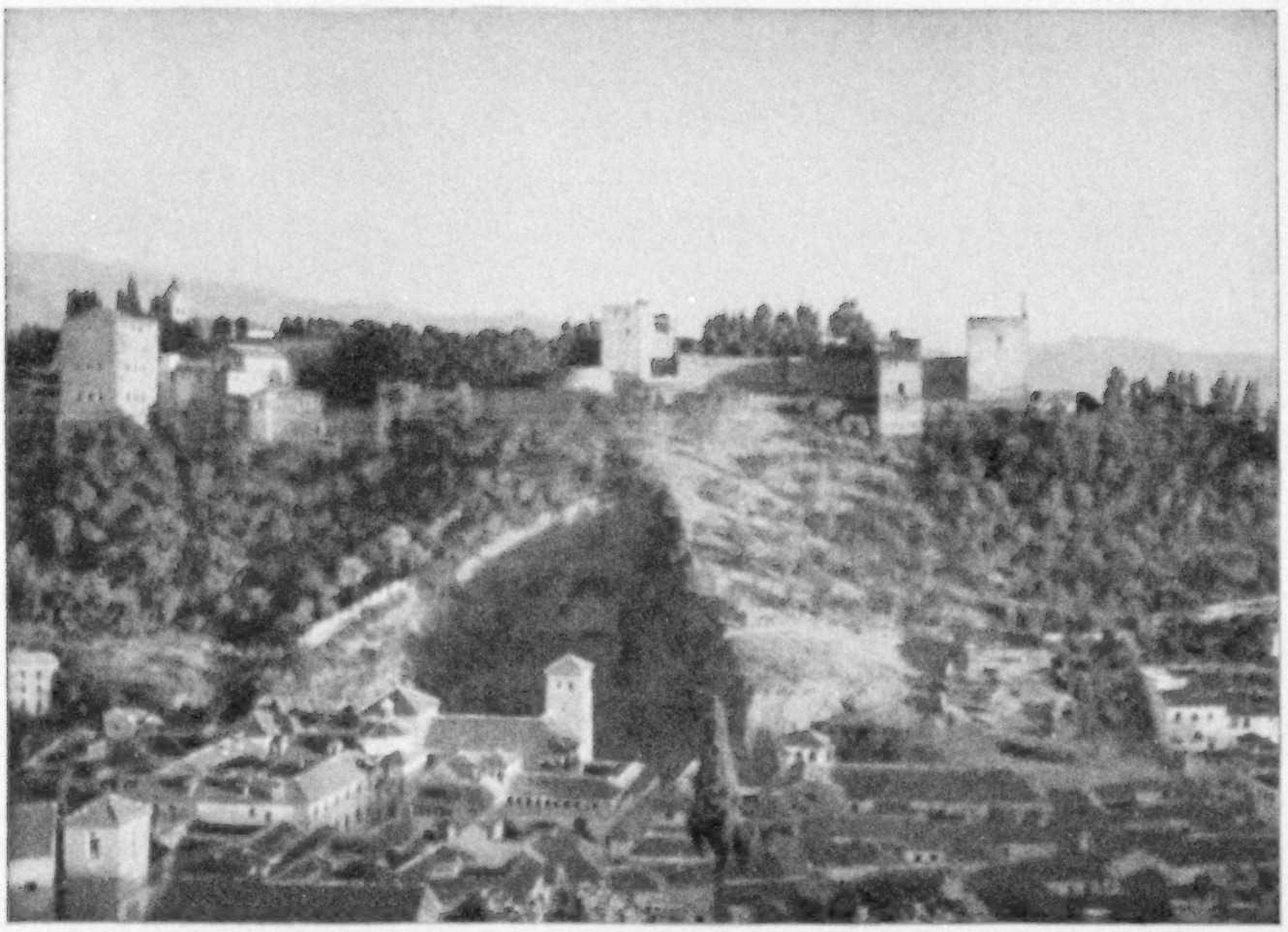
PEASANTS OF MOGARRAZ IN HOLIDAY COSTUME

The Spanish apparently have more feast days than any other people in the world. If there is not a national or local holiday to celebrate, the name days of the patron saints of members of the family call for festive occasions. The day of San Isidro of Madrid, the ploughman saint, is one of the most important throughout the Kingdom.



THE ALHAMBRA: WHOSE BEAUTY DEFIES DESCRIPTION OF UNNUMBERED WRITERS

© Autochromes by Gervais Courtellemont

A VILLAGE INTERIOR AT ALBERCA, IN THE PROVINCE OF SALAMANCA

XUM

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A LIVING ROSE OF OLD SEVILLE

The fascinating Manila shawl, the high comb, the brilliant skirt, the elaborate coiffure, and the carnation over her ear are typical. For street wear she will probably arrange over her head a becoming black or white real lace mantilla.

READY TO ATTEND THE BULLFIGHT

No wonder the *espadas*, the *banderilleros*, and the *picadores*, when they enter the arena of blood and sand, cast their glances toward the boxes! The women build their hair into little fortresses on the tops of their heads, just as the women of Spain did more than two thousand years ago.

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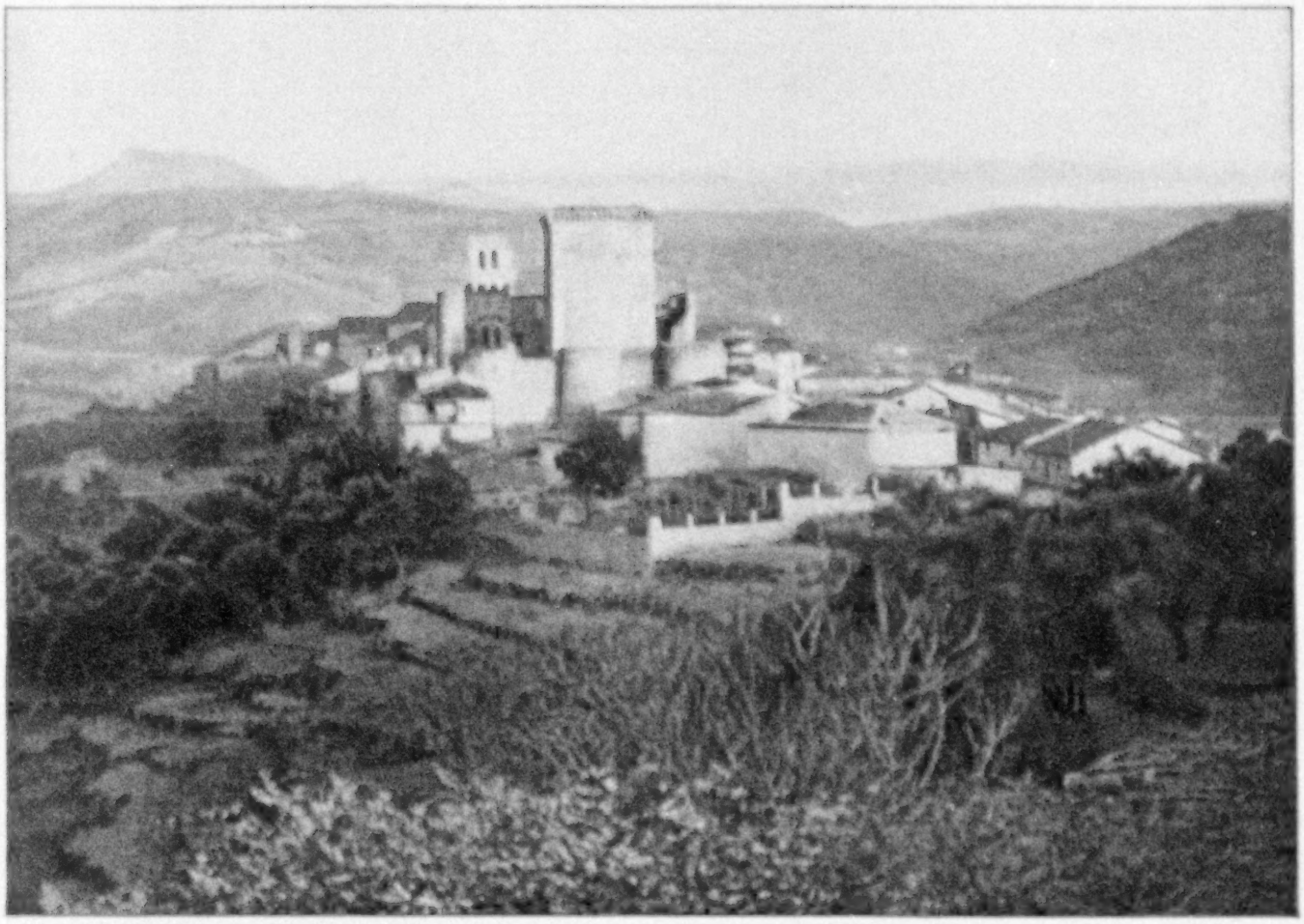
LAUNDRY DAY IN CORDOVA

In Spain washerwomen seldom hang garments upon clotheslines. They wash them in the public washhouses or by the side of a stream and spread them upon the grass or bushes to dry. If a baby's dress happens to be hung on a rosemary bush it is considered a good omen, because the Christ Child's linen was hung upon rosemary bushes on the hills of Palestine.



A QUAINT OLD TOWN IN THE PROVINCE OF SALAMANCA

Miranda del Castañar, situated in the Sierra of Francia, is encircled by a high, thick wall, with four heavy gates looking to the four cardinal points of the compass. On the eastern side is an ancient castle, with its exterior walls still standing in their original shape.

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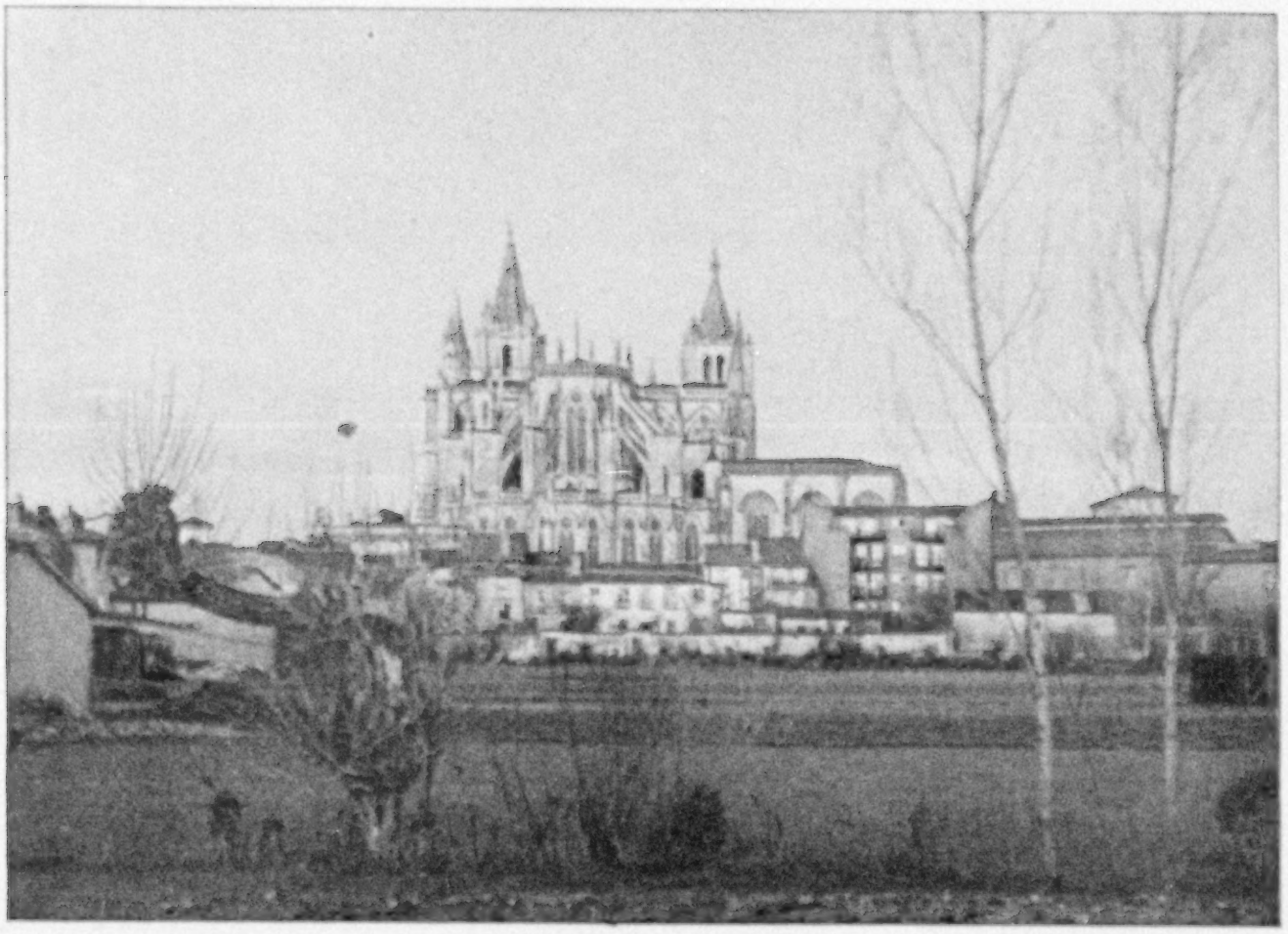
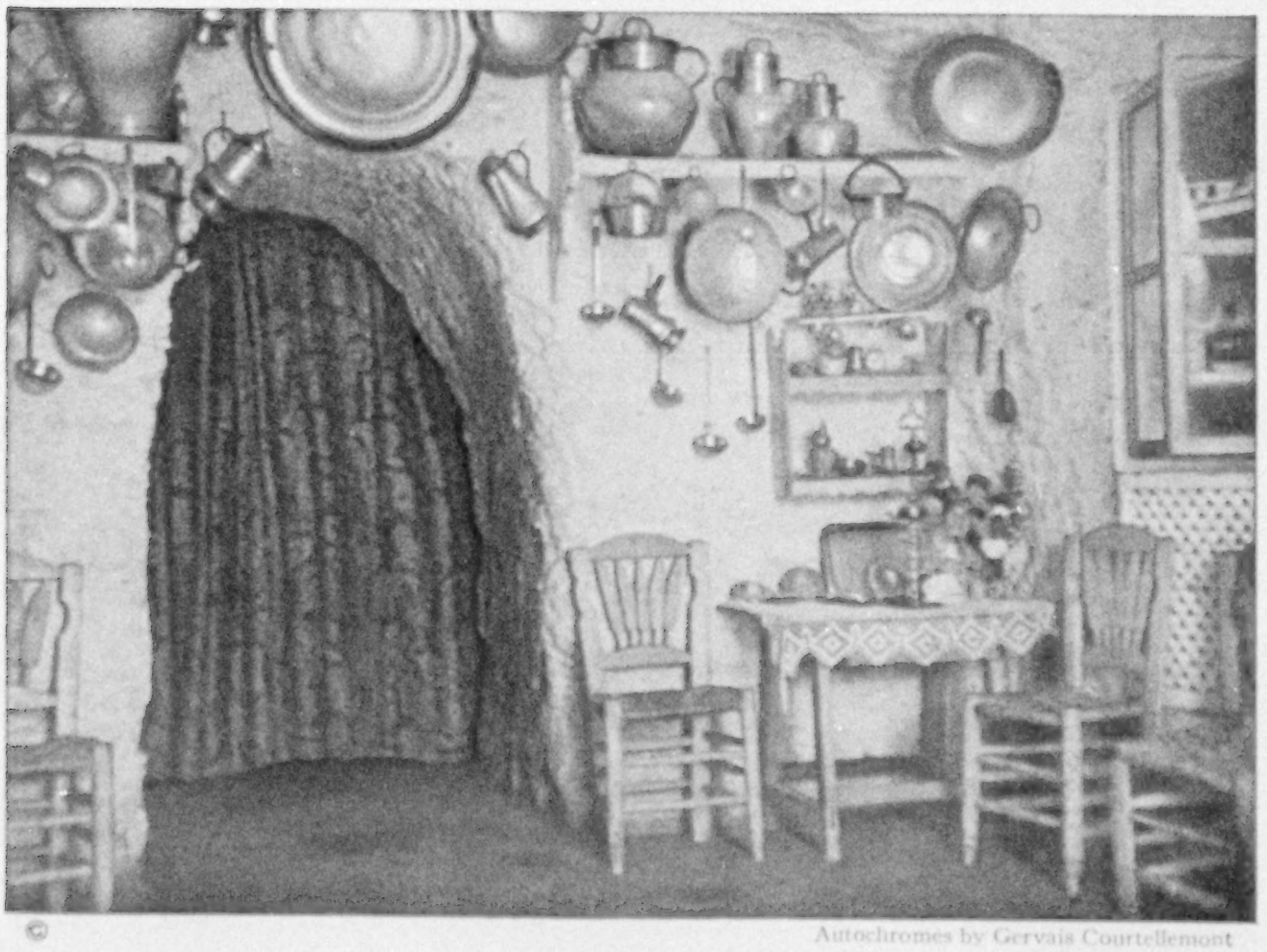
A FRUIT MERCHANT OF SEVILLE

Oranges from Valencia, bananas from the Canary Islands, big rough-skinned melons from Castile, peaches from Aragon, figs from Andalusia, apricots from Toledo, and grapes from Málaga lend color and fragrance to many city markets of Spain.



THE CATHEDRAL OF LEÓN AT SUNRISE

The Church of Santa Maria de Regla is one of the finest examples of early Gothic architecture in Spain, where religion has found beautiful expression in so many cathedrals. The foundations of this building were laid in 1199.



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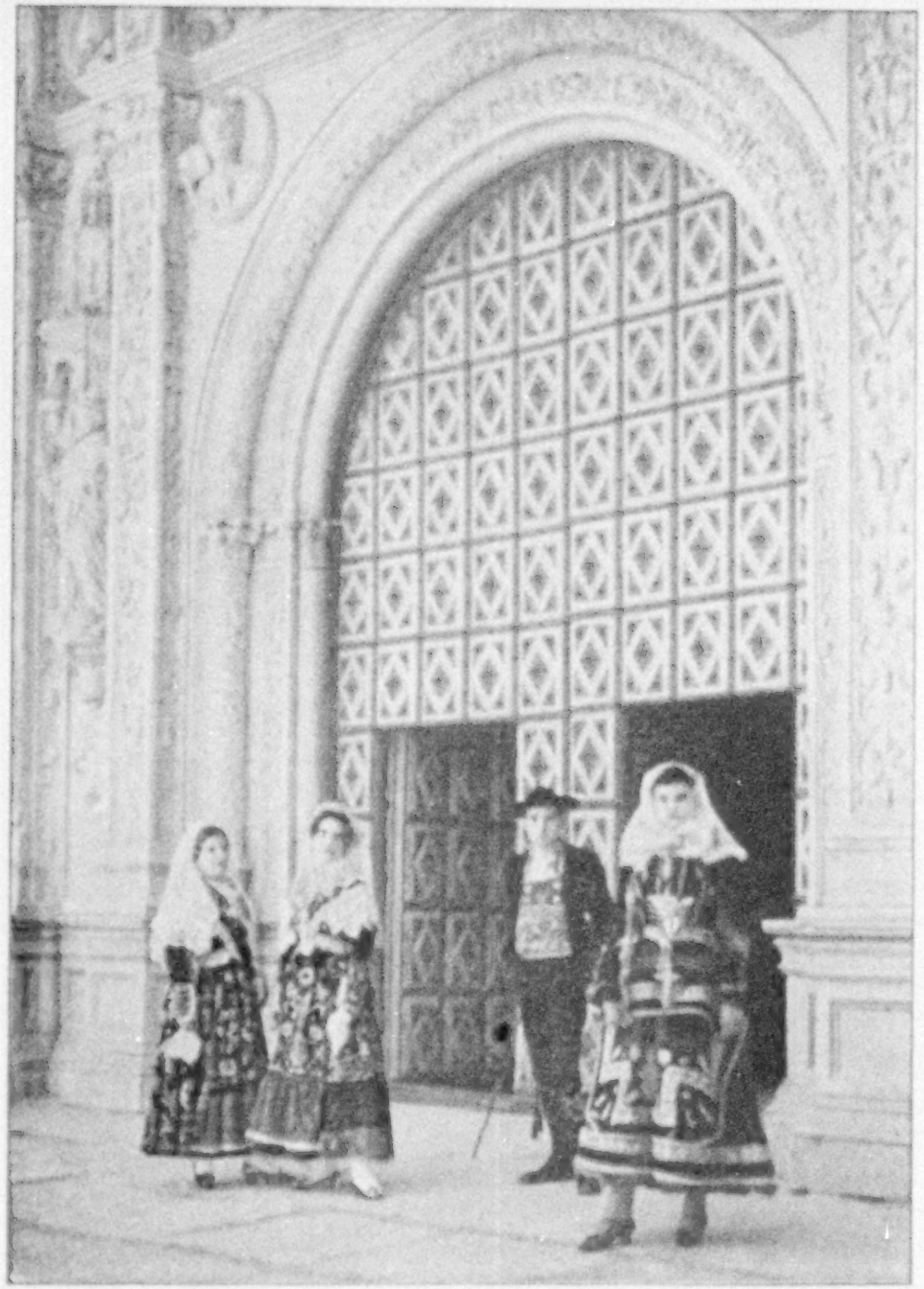
A GROTTO DWELLING OF THE GYPSIES AT GRANADA

The gypsies of Granada have given up their wandering tendencies to some extent and are living in whitewashed caves lighted with electricity, but gypsy dancing still is one of the chief tourist attractions of the ancient city.

XUM



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DEBUTANTES OF LAGARTERA (SEE ALSO PLATE I)

CHARROS, OR SALAMANCAN PEASANTS, LEAVING CHURCH

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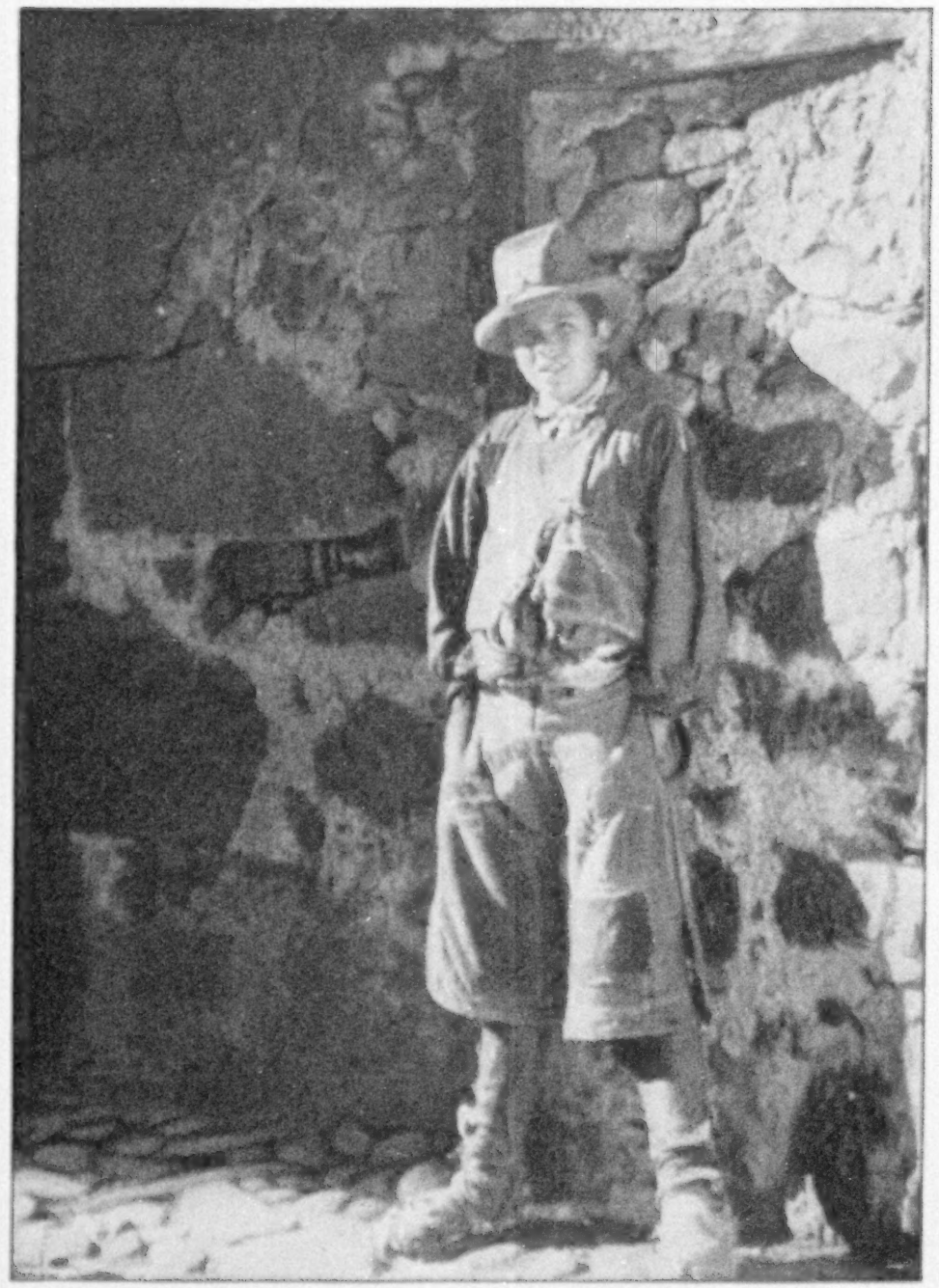

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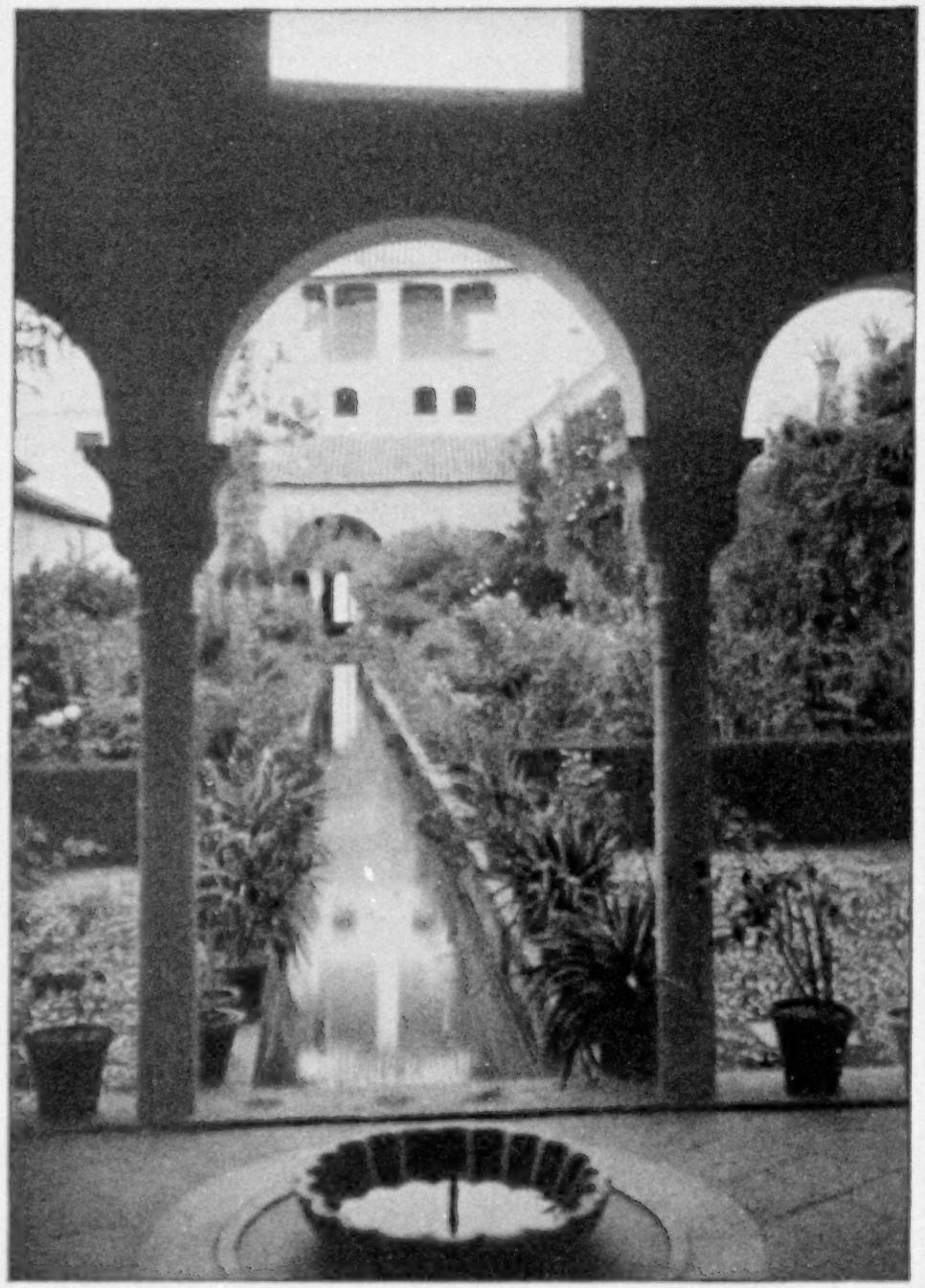
WAITING AT A CHURCH DOOR OF TOLEDO

Toledo, now a town of 20,000 inhabitants, is one of the oldest cities of Spain. Once it was the residence of the Kings of Castile and had a population of almost a quarter of a million. Outwardly it still retains much of its past magnificence.

A SHEPHERD FROM THE MOUNTAINS OF OLD CASTILE

The Castilian peasant is noted for his sturdy independence. A modern Sancho Panza would be as much at ease in the presence of a duchess as his prototype of Cervantes' "Don Quixote." He usually is clad in patched, weather-stained garments.



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A COOL RETREAT OF SUNNY SPAIN

The Palace of the Generalife in Granada offers examples of Moorish gardening at its best, a characteristic of which is the use of the reflecting pool and vista. Across the two ends of the pool are porticoed buildings and along the sides thousands of fragrant flowers and shrubs.

ANDALUSIAN DANCER OF SEVILLE

Dancing is common to every province of Spain, but in Seville it becomes a fine art. The Sevillan woman is distinguished by her manner of wearing her shawl; she folds it in an oblong rather than a triangle, so that it lies straight across the back and hangs over each arm.

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ONE OF THE CHIEF TREASURES OF MADRID'S MANY PICTURE GEMS

"The Surrender of Breda," by Velázquez, in the Prado Museum at Madrid, is often known as "Las Lanzas," because of the ranks of lances in the background. It represents the vanquished Justin of Nassau in front of his Dutch troops on the point of submissively giving to his conqueror the keys of the town of Breda, which the victor graciously refuses to accept.

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THE HOME OF A MIDDLE-CLASS FAMILY IN SEVILLE

Spanish home life is notably cheerful; even the little whitewashed cottages of the poor breathe a spirit of content. Often several families occupy the same house, living together harmoniously.

WHERE NARROW STREETS ARE FAMILY LIVING ROOMS AND PLAYGROUNDS

The thoroughfares of Mogarraz, like those of many small Spanish towns, are narrow, winding, littered, and poorly paved, but Spanish skies are clear and blue, and Spanish smiles friendly and welcoming.

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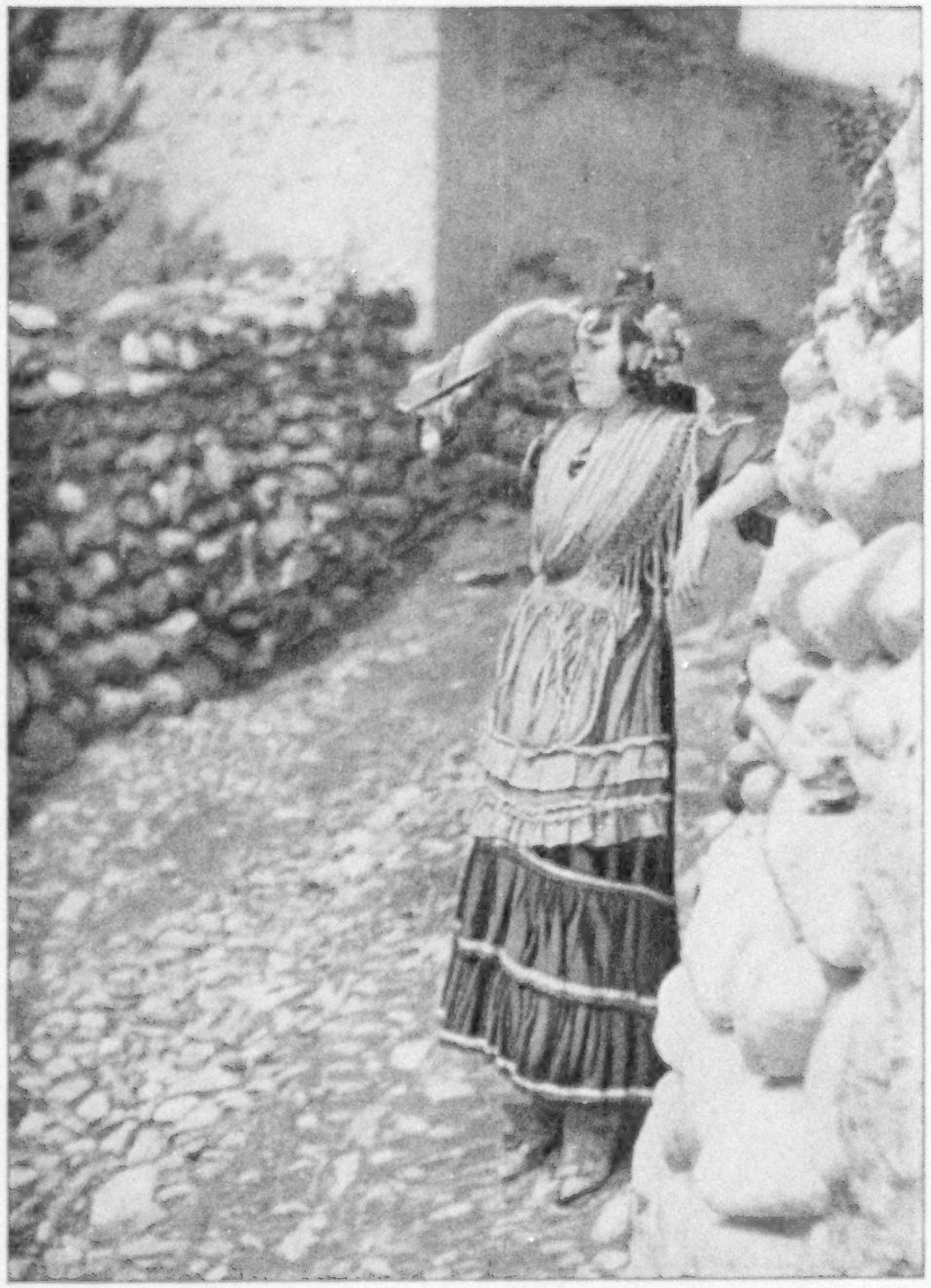
PEASANTS OF MOGARRAZ IN FIESTA COSTUME

Mogarraz, in the Sierra of Francia, on the river of the same name, is a pretty little village surrounded by olive orchards and gardens. Hills enclose it on every side except to the east. Some of the soil in the vicinity is light and sandy and therefore suitable for growing the grape. Wine is produced in large quantities, some oil is made, and fruits and vegetables are abundant.

©

THREE YOUNG BULLFIGHTERS OF SALAMANCA



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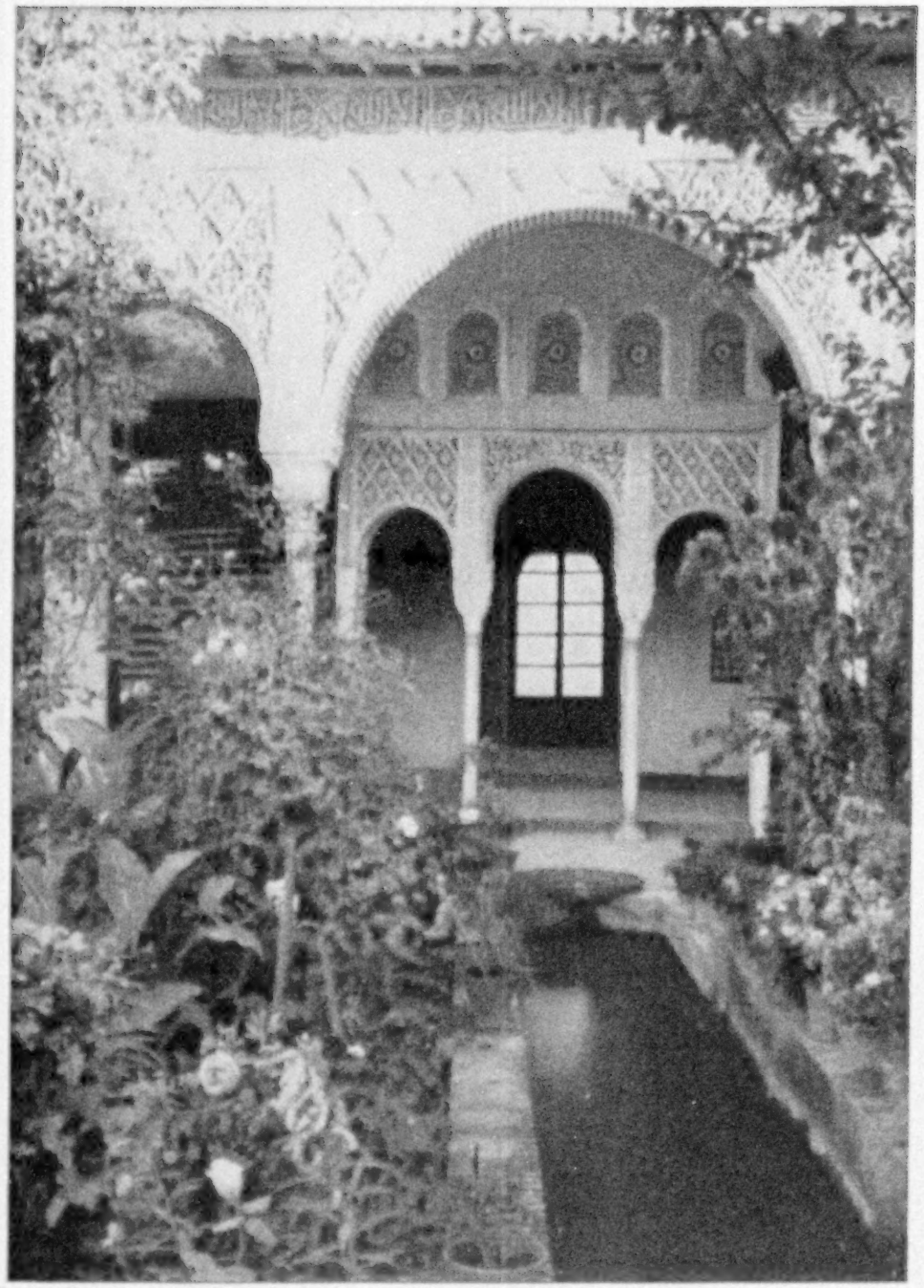
A GYPSY IN THE STREETS OF GRANADA



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THE PATIO OF A HOUSE IN SEVILLE

Most Spanish houses are built around a central courtyard paved with flagstones. In the northern part of Spain the patio is a communal back-yard for the families who occupy various portions of the house; in the south, however, it is a charming reception room.

THE SUMMER PALACE OF MOORISH KINGS

On a shelf of a hillside which overhangs the hill where the Alhambra stands are the white walls and towers of the Palace of the Generalife. Once it was connected with the Alhambra by a passageway, but now it can be reached only by a long detour from the highroad.

© Autochrome by Gervais Courtellemont

A PEASANT'S COSTUME WHICH A QUEEN MIGHT ENVY

Only the peasant women of Spain living in more or less remote portions of the country have retained their picturesque national costume. Each province has its peculiar dress, the people of the south and southeast adhering more nearly to the original type of Moorish costume, while those of the eastern coast wear adaptations of the headgear of their Phrygian forefathers.

colonies on the shores of the Mediterranean, dared at last to sail past the Pillars of Hercules, here to found Carteia, in the shadow of the great Rock, and Cádiz farther to the west.

Wheat, wine, wool, gold, silver, and lesser metals, salted eels of Tartessus, and Tyrian tunny were now borne eastward from Spain.

JEWS FLOCKED TO THE NEW LAND

It was only natural that the Jews, learning of this Land of Promise, should migrate to a country settled by peoples akin to them in race and tongue. Through these ports of the new land they called Tarshish the Jews spread throughout Spain.

To Carteia, some centuries later, the Carthaginians came as conquerors, and many of the Carteians marched with Hannibal on the long road to Italy. Here came the Romans as masters for more than 600 years.

We do not hear of the city after A. D. 410, when the Vandals carried fire and sword through Spain. The river mouth, used as a harbor by the ancients, has been blocked by the silt of centuries. Wheat fields now wave where proud Carteia stood.

It was to a hill above old Carteia, in 1704, that the Spaniards of Gibraltar, 6,000 strong, fled after the capitulation of the fortress, preferring to abandon their homes rather than submit to foreign control. With stones from Carteia ruins they began the erection of a town which they quaintly styled "The city of San Roque, wherein resides Gibraltar." Here they preserve the archives of pre-British Gibraltar and the arms, with three-tower gate and golden key, granted the city, in 1502, by Ferdinand and Isabella.

As late as the sixties of the last century, Spanish coins were struck depicting the Queen of Spain holding out an olive branch toward the Rock. This was when negotiations for the transfer of the fortress were pending. A later coinage portrays Her Majesty with the olive branch *behind* her back.

Beyond San Roque tower the rugged mountains which stretch through Málaga. Here deer abound. Owing to conservation measures taken by the King, ibex, threatened with extinction, are now increasing.

From Algeciras there is daily six-hour autobus service with Cádiz, on the other side of the province. The only rail connection is an all-day trip inland to Seville, with an additional three hours back to the sea.

Links in the projected military railway, to encircle the entire coast of Spain, are slowly being forged. This year I came by rail along the Mediterranean shore from the French-Spanish frontier to Cartagena; but to continue to the ports of Almería, Málaga, Algeciras, Cádiz, and Huelva meant in each instance a zigzag trip into the interior and out again to the coast (see page 205).

"THE PLACE OF THE WONDERFUL VIEW"

Throughout Spain, I found autobus lines connecting each town with its neighbors. Some are big double-deckers; some carry luggage on top. The bus has supplanted the old mule-drawn diligence in which we once jolted along the dusty roads of Andalusia, deafened by jangling bells and the driver's vociferous shouts.

The Málaga-Cádiz highway, via Algeciras, climbs over the hills to Tarifa and up the western shore. Near the mountain village of Pelayo we came to "The Place of the Wonderful View." The Atlantic and the Mediterranean, the Strait of Gibraltar, the shores of Europe and Africa, lay at our feet.

The velvety green hills of Spain tumbled into the swift, blue tide in their effort to join the equally green hills of Morocco. The promontories of Gibraltar and Ceuta seemed only a stone's throw apart. The Strait looked like a river. I counted fifteen ships bound east and west.

I thought of the last time I had sailed through the Strait at night, with seven lighthouses flashing their dazzling shafts of light out to our ship from these headlands of Spain and Africa.

WHALE HUNTING IN THE STRAIT

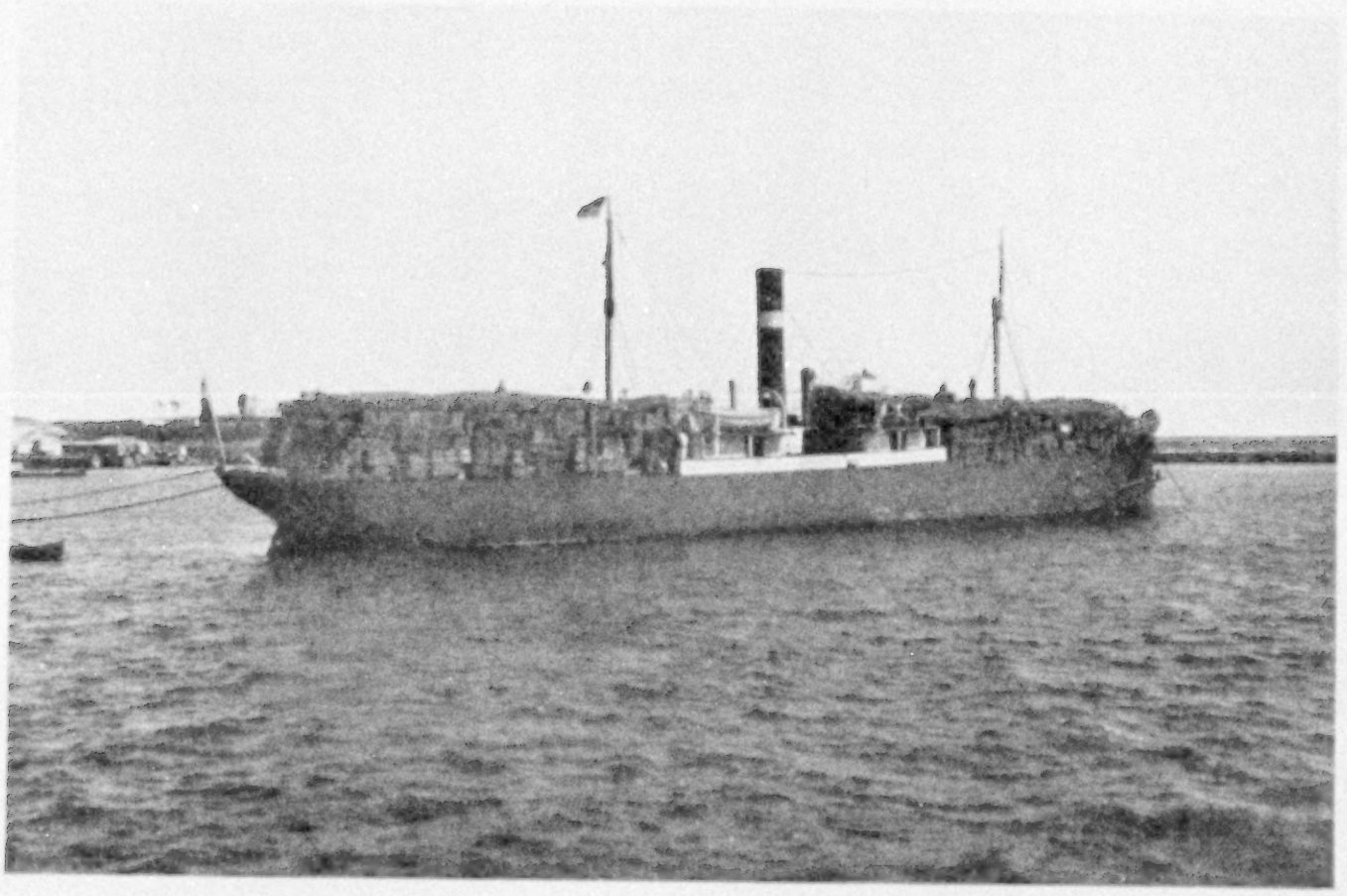
Whales, swimming to and from their Mediterranean breeding grounds, must brave harpoon guns in the Strait. The whaling industry has its base at Getares

Photograph from Harriet Chalmers Adams

BOY SCOUTS OF ALGECIRAS, CALLED IN SPANISH "EXPLORADORES"

A STREET SCENE IN ALGECIRAS

It was here that the famous Algeciras Conference was held in 1906 (see text, page 154).



A SHIPLOAD OF CORK BARK ARRIVING AT A TOWN IN NORTHERN SPAIN

Photographs from Harriet Chalmers Adams

A WAGON LOAD OF CORK DESTINED FOR AMERICA

Last year Cádiz province shipped more than 2,500,000 pounds of cork to the United States.

Photograph from Harriet Chalmers Adams

TESTING A COW TO SEE IF SHE HAS COURAGE ENOUGH TO BE BRED FOR "TOROS BRAVOS"

Inlet, near the western entrance to Algeciras Bay.

During the spring months the mother whale heads for the Atlantic with her young. If the calf is sighted, mother and babe go free, sire alone paying the toll. On the return trip into the inland sea the mother is not spared. Her only hope is to dodge the guns.

The whaling station is operated by a Norwegian company registered in Spain. Its beginning dates back some fourteen years, when a captain of the Norwegian mercantile marine learned that whales frequent these waters and sent down a whaler to study conditions. The company's officers and gunners are Norsemen, the workmen mostly Spaniards.

"These whales are all of one tribe," the manager told me, "finbacks or sulphur-bottoms, ranging in length from 20 to 60 feet. During the rainy season we don't catch many, as we can't see them blow. They go in as far as the Black Sea and out to Lands End, to Newfoundland—perhaps beyond.

"We ship the oil to England for soap and the fertilizer to Japan."

Owing to increased shipping through the Strait, the quantity and variety of fish in these waters have greatly diminished. In the days of sailing vessels, tunny fishing was so important an industry that sentinels were stationed in towers along the shore to signal the passing shoals. There is a record of more than

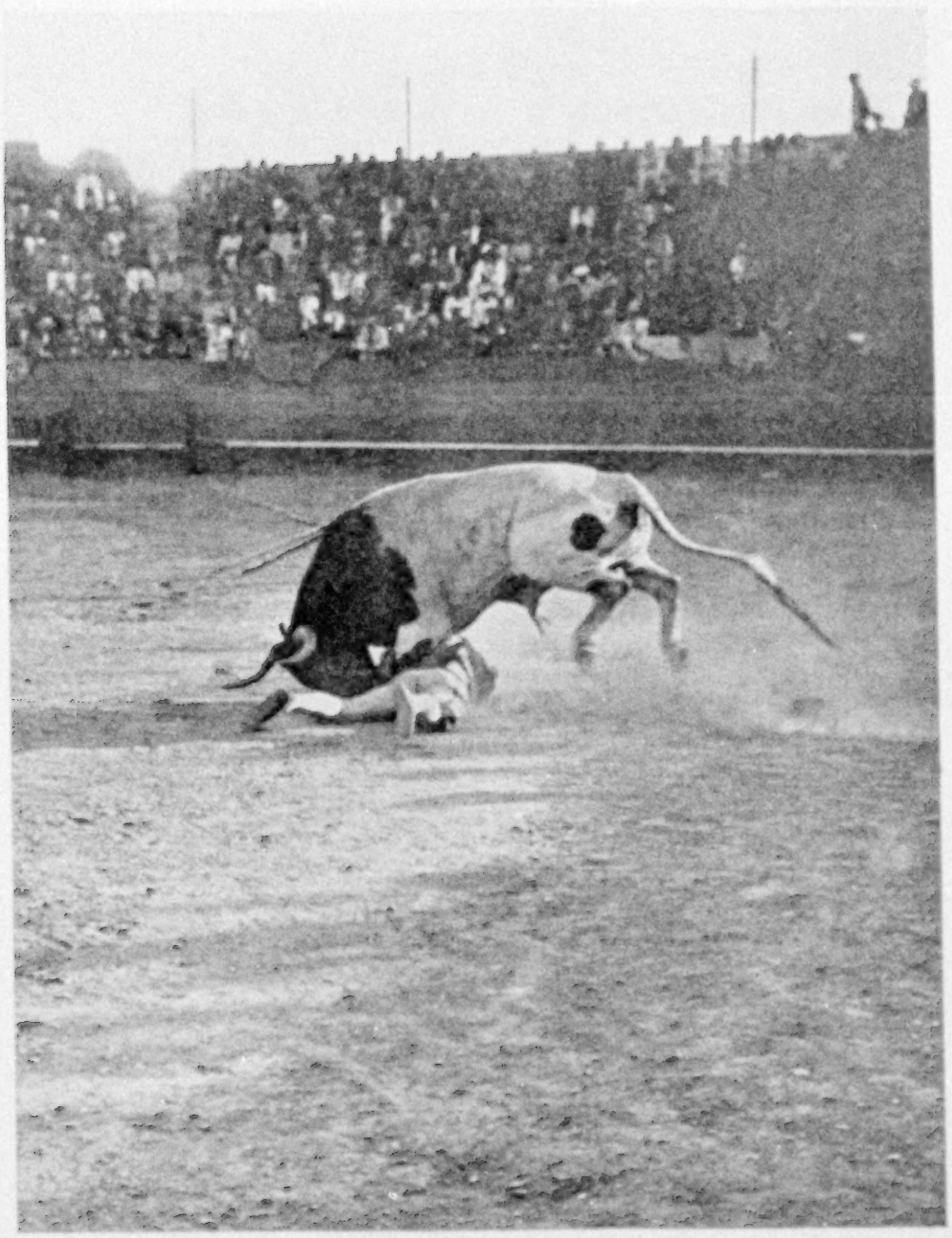
100,000 of these big fish being taken off Gibraltar in the year 1558.

The present tunny fisheries extend along the Atlantic coast from Tarifa to the mouth of the Guadalquivir River, the largest canneries being at San Fernando, on Cádiz Bay.

The little town of Tarifa wears a halo of romance. Its unique situation at the extremity of the European Continent, its Moorish aspect within its time-aged walls, its wealth of associations, combine to set it apart, even in a land where many towns have a 3,000-year-old history. It owes its name to Tarif, the African raider, who landed here in 710. Meeting with little opposition, he returned with plunder to Morocco.

The following year the Saracen governor of northwest Africa sent over an expedition, composed of Arabs and Berbers, under a chief named Tarik. Landing at Gibraltar, 12,000 strong, they burned their ships and set out on foot for the camp of the Goths. Here Tarik defeated Roderic, winning Spain for the Moslems.

It required nearly eight centuries and more than 3,500 battles to drive the Mohammedans back across the Strait.



Photograph by Angel Rubio

IN PERIL OF HIS LIFE: A TENSE MOMENT IN THE ARENA OF CEUTA

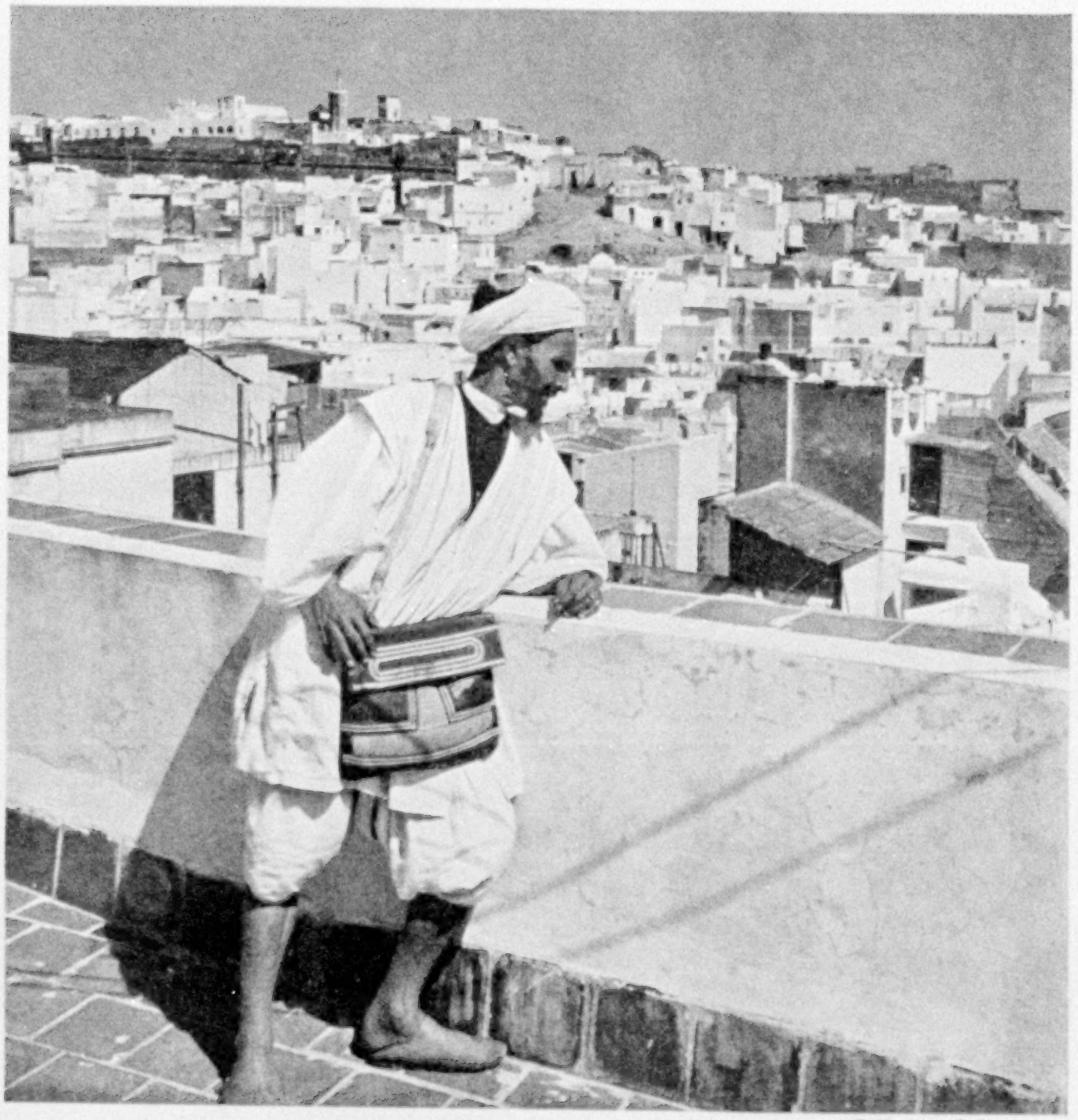
THE ORIGIN OF OUR WORD "TARIFF"

From duties levied in Tarifa on all merchandise in ships passing through the Strait in Moslem days has come our word "tariff."

The more conservative *Tarifeñas* wear double petticoats, pulling the upper skirt up over head and shoulders, with only one eye peeping out. They look not unlike the Arab women of Fez and Mekinez. There are so many little things which link Andalusian Spain with the Morocco of to-day.

Here, as in North Africa, donkeys, laden pannier-wise, jog along the country roads. These dark-colored Spanish asses, which came into Spain from Morocco, sailed west with the conquistadores to become the New World burros—long-suffering little creatures, hardy pioneers as ever sailed from Cádiz, unhonored and unsung.

Not far from Tarifa, we passed the ruins of a watchtower high up on a rock by the shore, one of a long chain of



© Herbert G. Ponting

OVERLOOKING TANGIER FROM A TOWER IN THE CITY

It is conceivable that when the Trans-Saharan railway is completed to Dakar, in Senegal, the South American traveler will make a quick trip across the Atlantic at its narrowest point, go by express to Tangier and there be ferried across the Strait and connect with a fast train for Paris (see text, page 159).

towers to be seen all along the Spanish coast from Huelva to Gerona. In turbulent days they served as heralds against the unexpected arrival of Barbary corsairs. The enemy sighted, the news was flashed for miles, from tower to tower.

Leaving the sea, the road now strikes inland, skirting a big lagoon teeming with duck and graylag geese. From reeds, six feet in height, fringing this lagoon, straw covers for Jerez wine bottles are made.

One must travel far to find a prettier country than southernmost Spain in the springtime. In the flower-spangled fields shepherds tend the silky-wooled merino sheep; by the clear pools the golden iris grows; in the gentian-blue sky float the billowy clouds Murillo loved to paint.

Country lads, in corduroy suits and wide-brimmed, high-crowned felt hats, trudge the long road or perch sidewise aloft their laden donkeys. Graceful,

dark-eyed girls wave to them from thatched cottage doorways.

There is little cultivation until we reach the hill town of Vejér de la Frontera, where the cork gives way to the pine. The country from here to Cádiz is more settled.

Another highway branches north from Vejér to Medina Sidonia and Arcos de la Frontera. This "de la Frontera," meaning "of the frontier," attached to so many town names, is a reminder of those troubled days when these fortified places on the heights were Christian outposts on the verge of the Moslem kingdom of Granada.

Medina Sidonia is a very great name in Spain. A duke of this family was once sole owner of the Rock of Gibraltar; another commanded the Spanish Armada; a third saved Cádiz from the British. Vast estates, like those of Medina Sidonia and Medinaceli, influencing the economic life of the country, are inheritances from the days when boundless territories wrested by nobles from the Moslems were granted the former by their sovereign.

This unequal division of land has caused much misery in Spain. Some of these great estates have their vineyards, olive groves, grain fields, and herds of cattle; others are quite undeveloped. Where one man may not trouble to plant a tree or dig an irrigating ditch in all his vast domain, five thousand other men yearn for a little scrap of ground that each may call his own.

There is much talk about the high cost of food and clothing and the lack of opportunity for all save the rich. This is one of the many problems confronting General Primo de Rivera.

Miguel Primo de Rivera y Orbaneja, President of the Military Directorate of Spain since September, 1923, is a son of Cádiz. He was born fifty or more years ago, in the city of Jerez de la Frontera, best known for its sherries and cognacs.

THE HOME OF SHERRY

Jerez, pronounced "Herr-ayés," about ten miles inland from Cádiz Bay, is my favorite Andalusian town.

The name "Jerez" is a corruption of the Arab "Sherish." "Sherry" was as near as the English came to it, and this wine, made popular in England by Sir Francis Drake and Frobisher, put Jerez on the map.

I went to Jerez to visit the great wine *bodegas* and the stock farms where spirited Arab horses and fiery bulls for the bull ring are bred. I remained to revel in the floods of shining light; in bird song and the scent of orange blossoms, lilacs, and locusts.

I love this conservative Spanish city which most travelers, eager to reach Seville, pass by. Its whitewashed houses, with their narrow balconies and colorful roof-gardens, have the most captivating patios, glimpsed through fretwork of delicate tracery. Many of the doors are surmounted by crests made famous in New World annals.

JEREZ VINES, SENT TO AMERICA, COME HOME AGAIN

On the gently rolling hills outside the city are the ancient vineyards, parent vines of those brought to the Americas many centuries ago.

"And the interesting part of it is that we now have New World vines brought back and planted in the mother soil," said an Englishman of Jerez, whose father founded the world's leading sherry firm some fifty years ago.

"Sherry, as Sir Francis Drake knew it, was a pale, sweet wine," he told me. "It was not until the seventies of the last century that dry sherry became the vogue in England. Then they served it as we now serve tea."

The cool, lofty wine cellars of this old firm overlook the most beautiful of gardens, where every kind of flowering bush runs riot and all the birds in Andalusia seem to congregate.

On the Italian Riviera I was fascinated by the "Flower Express," which leaves the blue sea every winter afternoon, carrying carnations to the frozen cities of the north. In Jerez the "special" is a wine train, which leaves the station between two and four every morning for the Cádiz pier.

All the big bodegas have their private railway tracks connecting with the Seville-Cádiz Railroad, and the "special" wanders about town all day gathering in its "spirited" load.

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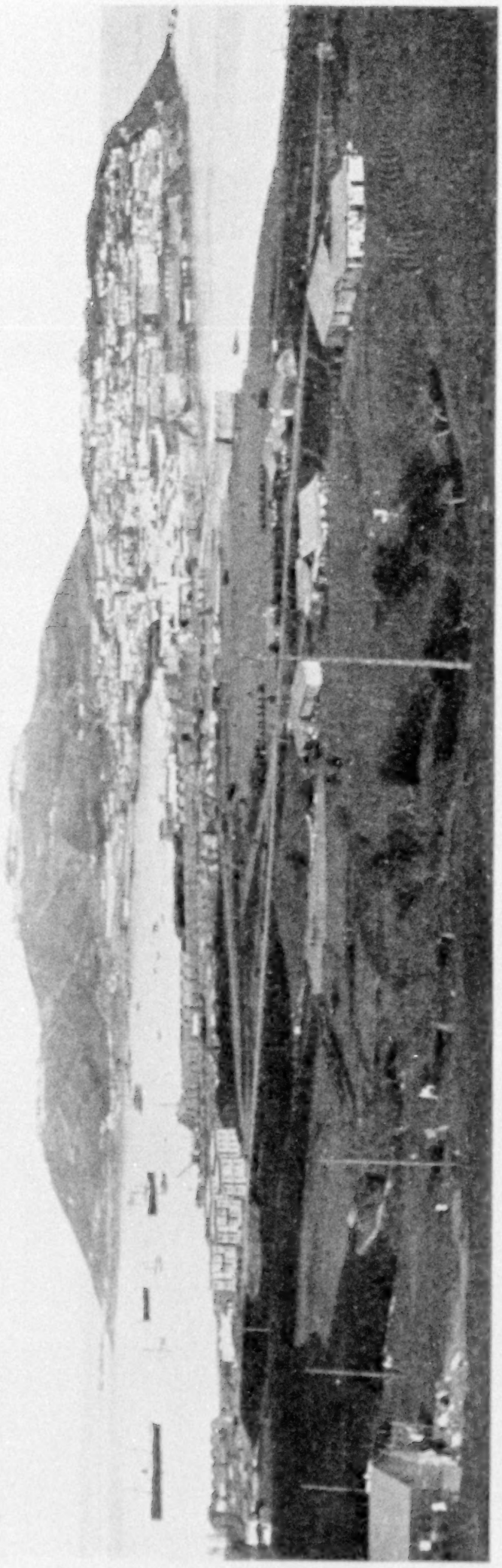


Photograph by Angel Rubio

A GENERAL VIEW OF CEUTA

This Spanish possession in North Africa is built on a narrow isthmus and on the bold promontory which rises to a height of 636 feet opposite the Rock of Gibraltar. Ceuta is a name of great import to scholars, for it was here that the first paper manufactory was established in the West.

Besides sherries and cognacs, champagne and the highest grade of white wine are made in Jerez. The lives of the city's 60,000 and more inhabitants are closely linked with wine production. This fertile region, bounded by the Guadalquivir River, the sea and the hills, seems peculiarly fitted to the growing of white grapes.

Many of the vineyards bear names indicative of the intensely religious character of the people: "Sainted Trinity," "Jesus, Mary, and Joseph," "Our Lady of Perpetual Succor." Thirteen enormous wine casks, in the largest of the bodegas, are known as "Christ and the Twelve Apostles."

A CITY OF WONDERFUL HORSES

I reached Jerez during Holy Week, where religious processions lasted far into the night. The most distinguished men in the community walked behind the sacred images. A feature new to me was the introduction of a company of lancers on splendid thoroughbred mounts.

All lovers of horses should come to Jerez. In this automad world there are now few places where one may see perfectly matched spans. Here gentlemen still take pride in riding and driving their own thoroughbreds.

I was just a year too early for the National Horse Fair, to be held in Jerez in the spring of 1925, so consoled myself with a visit to the largest of the horse farms. Here I found the superb Arab horses I failed to see when crossing Morocco.

The pure Arab strain, which came into Spain with

XUM

Photograph by Angel Rubio

MOORISH CAVALRY IN THE SERVICE OF SPAIN

The Spanish zone of influence in Morocco extends from the Atlantic Ocean for some 200 miles to the east and is a strip of territory along the Mediterranean having an average breadth of 60 miles. In recent years the Spaniards have met with serious reverses in their efforts to extend their zone of occupation in this region.

"THE SPIRIT SPECIAL"

This train passes the door of each big wine cellar in Jerez, collecting its load for the daily 2 a. m. service to Cádiz pier (see text, page 185), whence some of the wine is still shipped to the United States, for medicinal and sacramental purposes.

Photographs from Harriet Chalmers Adams

ONE OF THE COOL, LOFTY WINE CELLARS OF JEREZ

A vat in one of the largest of the Jerez *bodegas* (wine cellars) has a capacity of 15,000 gallons. Only white grapes are grown in this part of Spain. September is the month for gathering the fruit and pressing it.

Photograph from Harriet Chalmers Adams

AT THE BULLFIGHT

Other sports, however, are supplanting in popularity the espada's combats. Especially is this true in northern Spain, where American football has caught the fancy of the younger generation (see text, page 156). Jerez is famous for its bulls.

the Moslems, degenerated; for nearly a hundred years the Spanish stockmen have been building it up. The best stock now is pure Arab and Anglo-Arab (a cross of Arab and English Thoroughbred); Hackney (English trotting stock) and Hispano-Hackney for spans.

Some of the horses were "put through their paces," with much tossing of noble heads, arching of necks, and high stepping. In Seville, Madrid, and Barcelona these fine animals are also bred.

BULLS READY FOR THE RING WHEN FIVE YEARS OLD

My next visit was to one of the *criaderos* where bulls for the bull ring are raised. Jerez bulls are famous. It struck me as remarkable that the long-horned mothers of these valiant sons should be such scrawny, inoffensive-looking cows.

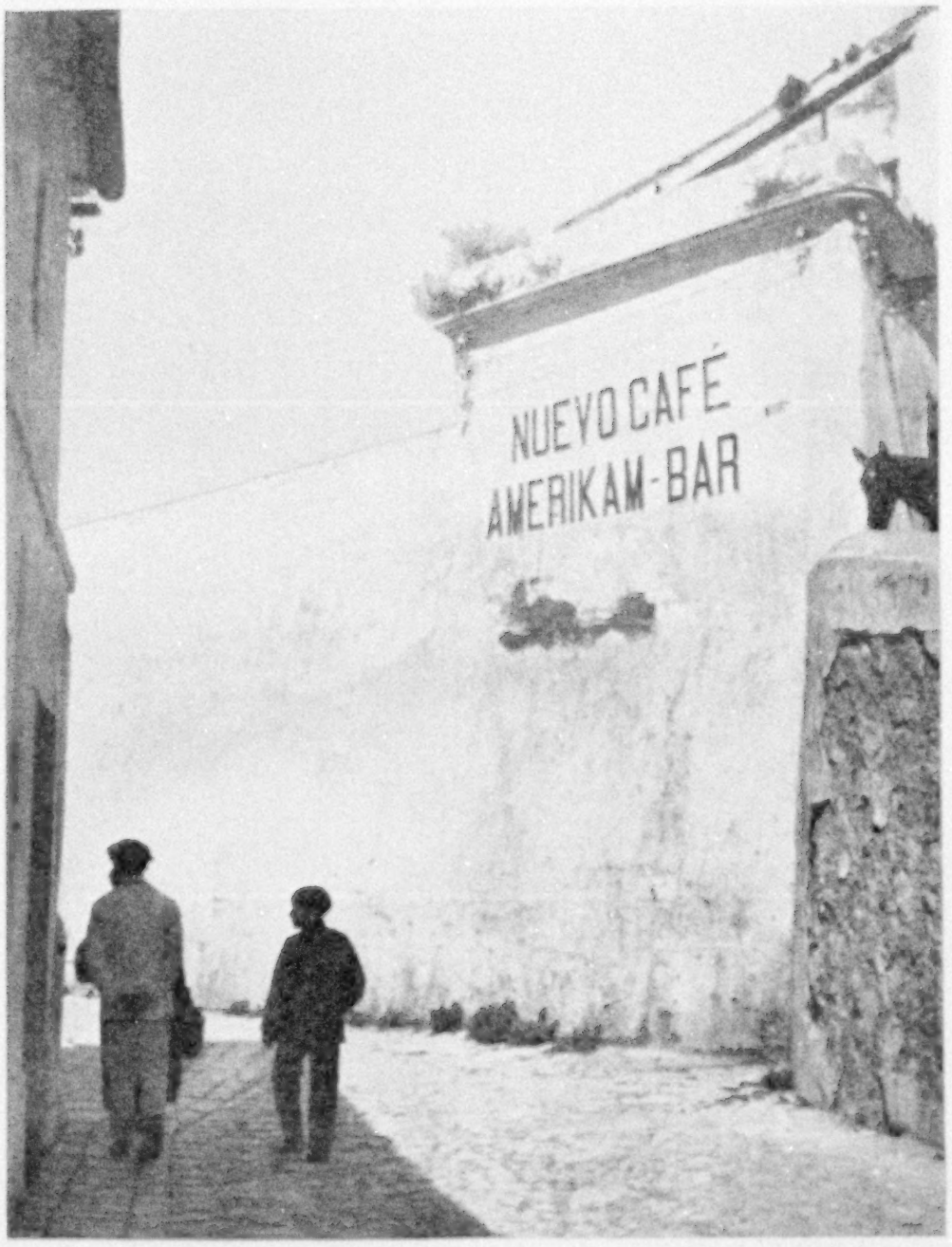
Not all the youngsters, however, have the fighting instinct. Men on horseback, carrying long spikes, ride into the field to test the courage of the young bulls. If not found wanting, the animals are eligible for the combat at the age of five (see illustration, page 194).

"Even some of the brave ones escape the common fate," a South American cattleman told me. "I'm here to attend the spring stock fairs, and some of these splendid fellows are sure of a long life on the Argentine pampas."

Raising bulls for the bull ring has long been a popular occupation of Spanish country gentlemen. The late Duke of Veragua, a descendant of Columbus, was thus engaged.

THE BULL THAT WAS SAVED

I heard the story of one Andalusian bull which, although bred for combat and playing a star rôle in a bullfight, escaped death. This bull, a powerful black animal, was shipped overseas to Mexico.



Photograph by Harriet Chalmers Adams

AN UN-AMERICAN SIGN IN JEREZ

With him went the old stockman who had cared for him ever since he was a calf, the one being with whom he was not savage. Between man and beast there existed a real friendship.

The day of the bullfight dawned. A noted espada was to distinguish himself. The bull was wild for freedom. The man from the fields of Jerez, heavy of heart, sat among the spectators.

There was the usual gory scene. The tortured bull, desperate from cruel fire-darts and deep spear-thrusts, succeeded in tossing two men and killing four horses. To him the wretched horses seemed the chief tormentors. After each assault of *banderilleros* and *picadores* he bravely struggled on. The great espada's most skillful attacks failed to down him.

In the end the creature's valor won the heart of the fickle mob. Shouts went up that his life be spared.

Down to the edge of the bull ring came the old stockman. His cheeks were wet with tears. In the bloody arena of an alien land, he gave the call the bull had so often heard in the flower-strewn Jerez fields. With a mighty effort the poor animal lifted his head and staggered toward that well-known voice, somewhere out in the mist.

A man who witnessed the scene said that a great sob came from the audience, as the old man laid his hand on the bull's neck and led him from the ring.

GAY SCENES IN JEREZ DURING FAIR WEEK

The Jerez Fair was held in May this year, at the close of the fair in Seville. For a fortnight preceding it the city underwent a general spring house-cleaning, with much whitewashing of houses and repaving of streets. For four days the town was in a whirl of excitement, with processions, fireworks, a battle of flowers, a football match, and three bullfights.

The fairgrounds, colorful by day and gorgeously illuminated by night, were thronged with pleasure-seekers. The crowd was densest on the main avenue, lined with permanent buildings, the Fair Week homes of prominent families and clubs, which here received their guests.

Many of the women discarded their perpetual black, looking like so many butterflies, with their gaily colored Spanish shawls and fluttering iridescent fans.

Photograph from Harriet Chalmers Adams

LA CARTUJA, THE FIFTEENTH CENTURY MONASTERY NEAR JEREZ

These ruins, which are of great architectural beauty, are now being restored. The main doorway to the church of the monastery is here shown. Note the stork's nest on the topmost point of the cathedral.

Black lace mantillas and high combs they wear habitually. Hats find little favor with the brown-eyed *Jerezanas*.

In the stock inclosure domestic animals of all kinds were on exhibition. Spanish mules have long been noted for their excellence. The blue-black fowls, like the merino sheep, are a distinct Spanish variety.

A VISIT TO LA CARTUJA

It was restful one afternoon to escape from the Fair din and drive out a country road to La Cartuja, the fifteenth-century monastery founded by a son of Jerez years before his fellows carried cross and sword overseas. In utter ruin, the home of storks and bees, Cartuja is still one of the architectural glories of Spain. The great pile stands on high land overlooking a wide stretch of fertile country through which the Guadalete River winds. These fields, as far as the eye can reach, belonged to the Carthusians.

The façade of entrance gate and church within are most ornate. The foremost architects, sculptors, and painters of their day worked here—Montañés, Zurbarán, Cano, Ribera; but the priceless paintings and wood carvings have been borne away to grace more fortunate churches. A little remains of the work of Alonso Cano, first of his century to turn to life and joy when others depicted death. He was human. His women have soft Andalusian eyes. He portrayed Mary as a smiling mother.

The cloisters are the best that is left at old Cartuja. From their cool depths one looks out on a peaceful, sunlit courtyard. Above, on crumbling turrets, storks have built their bushy nests (see above).

I drove back to town at sunset to the tune of the coach horses' bells. The air was sweet with orange blossoms. Through the rose-tinted sky hundreds of swallows darted.

It is a two hours' rail journey from Jerez to Cádiz, following the horseshoe curve of Cádiz Bay. The city of Cádiz

Photograph from Harriet Chalmers Adams

DRYING GRAPES IN THE SUN AT JEREZ DE LA FRONTERA

Pale white grapes grown in white soil are used for sherry, which derives its name from the English corruption of the pronunciation of "Jerez" (see text, page 185).

lies at the outer end of the horseshoe, on a long, narrow peninsula between the bay and the sea. Just opposite it, at the beginning of the curve, where the Guadalete River enters the bay, is historic Puerto de Santa María.

CÁDIZ LINKS THE OLD WORLD WITH THE NEW

No town in Spain, with the exception of San Lúcar, brings the period of New World discovery and colonization as near to us. In those romantic days, when Seville was the richest city in the world, the Puerto was its beach resort. Countless old houses, now fallen into decay, bear over their doors the crests of Spain's proudest families. The shore near the river's mouth has known the footprints of many a conquistador. From Puerto de Santa María, San Lúcar, or Cádiz, nearly all of them set sail, and the Puerto seems richer in landmarks than its sisters.

San Fernando, at the head of the bay, lives in the present. It is a naval base, with shipbuilding yards near by, and the seat of several important industries.

Salt forms one of the chief exports from Cádiz. Salt pans many square miles in extent surround San Fernando. In the intense heat of summer evaporation is rapid and the salt left in the ponds is raked into huge conical mounds (see page 196).

The effect of hundreds of these gleaming pyramids is bizarre in the extreme. By moonlight they resemble the desert tents of the Arabs. Much of this high-grade salt is shipped to the Uruguayan and Argentine meat-packing plants. As far inland as Paraguay I have seen "Cádiz salt" on sale.

SAN FERNANDO HAS ANCIENT TUNNY FISHERIES

The preserving of tunny fish, like salt-making, is an ancient industry. The Phœnicians and Romans exported dried fish from Spain. Tunny weighing from 300 to 600 pounds are caught in the spring on their way to

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Photograph from Harriet Chalmers Adams

BASKETS OF THE FAMOUS WHITE GRAPES OF JEREZ AND A GROUP OF GIRLS EMPLOYED IN THE BODEGA IN THE BACKGROUND

Practically all of the oak barrel staves used in making casks for the wine of this district come from the United States. Some chestnut staves are also used.

Photograph from Harriet Chalmers Adams

MOUNTED MEN ARMED WITH PIKES TO TEST THE COURAGE OF YOUNG BULLS DESTINED FOR THE ARENA

Note the broad-brimmed hats, called *El Ancho*—The Wide.

the Mediterranean, and in late summer as they return to the Atlantic. Most of the canned tunny from San Fernando is shipped to Italy, where it is packed in smaller tins for reshipment with Italian labels.

Fish guano, made from the head, tail, and bone of the tunny, is exported in bags in the raw state.

From San Fernando the railroad and highway follow the curve around to the long peninsula on whose extreme point white-robed Cádiz stands.

DISCOVERY OF NEW WORLD BROUGHT GLORY TO CÁDIZ

There are European cities more attractive than Cádiz, more modern, with more of the joy of life, but none surpass in unique situation this sea-girt Spanish town. It is Aphrodite rising from the deep.

Fully to appreciate Cádiz, one must approach it from the sea. It was starlight on Christmas morning when our ship, bound from New York to Barcelona, neared its first Spanish port.

As day dawned, I saw a great gleaming water lily afloat on the dark tide. In the half light of winter morning it seemed a fairy thing. Gradually it took shape—the sea-wall, the twin spires of a church silhouetted against the pale-pink sky.

When the sun rose and the waters turned blue, the city shone white as any African town.

Far back in the shadowy past, when the Phœnicians sailed up the coast, this was an island. The causeway connecting it with the mainland is the work of man. By the time the Carthaginians arrived, there was a crude wall around the settlement. Hamilcar and Hannibal used it as their base in the first war between Carthage and Rome; Scipio Africanus did the same in the Second Punic War.

Under the Romans it became an important town, its Phœnician name of "Gadir" being changed to "Gades." Vandals and Visigoths left no trace, but the imprint of the Moslems is on the whole of southern Spain. The white walls, flat roofs, and narrow streets of Cádiz are part of its Arab garb.

Since 1262 this has been a purely Spanish city. The "Gades" of the Romans and the "Kales" of the Moslems became "Cádiz," pronounced "Kah'-deez." Its days of glory came after the discovery of the New World, when the red and gold banner waved over two continents and Spain's fleet ruled the seas.

In the seventeenth and eighteenth centuries it was the most renowned port in the world, treasure-house for the wealth of the Indies, estimated at not less than $600,000,000 yearly. A massive sea-wall was built to protect the city, which was plundered by Barbary corsairs and the English. Drake burned all the shipping in the bay and Essex carried off everything of value in the town. When the British called the third time they were repulsed so severely that the bay ran red with their blood.

The city's most heroic days came in the early years of the nineteenth century, when the hosts of Napoleon swarmed over the land. In Cádiz was preserved the core of independence. Here, within sound of the guns thundering on the mainland, secure within walls and moats, with sea as ally, the brave men of Cádiz issued their proclamation of a free, new Spain. In the Academy of Fine Arts hangs Rodríguez' great historical painting, "The Junta of Cádiz Announcing to the People Its Answer to Soult's Summons to Capitulate."

The island-peninsula, on whose tip the city stands, bears the name "Isla de León." It once belonged to the family of that Ponce de León who sailed to Florida in quest of the Fountain of Youth.

THREE WAYS TO ENTER CÁDIZ

There are three ways to enter Cádiz: by sea; by rail, over the causeway and a stretch of artificially made land; by highway, paralleling the railroad track and through a gate in the walls called *Puerta de Tierra*, or Gate of the Land. Through this ancient portal the human tide ebbs and flows (see page 197).

Cádiz is a clean, smokeless city, freer from beggars than most Spanish towns. Nearly all of its streets are exceedingly narrow—just wide enough for the passage of a carriage. The driver shouts instructions to his horse and warnings to the pedestrians.

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WORK AT THE SNOWY SALT STACKS OF SAN FERNANDO ON MARSHY LEVELS NEAR CÁDIZ

San Fernando, about six miles from Cádiz, is noted for its curious salt pans, where ocean water is let into the shallows and evaporated. The salt is heaped into pyramids and shipped in sailing vessels to various ports of the New World. San Fernando is one of the principal naval ports of Spain. Important tunny fish canneries are also located here (see text, page 192).

There are few sidewalks where two can walk abreast with comfort. When a carriage or occasional automobile passes, it is safer to flatten oneself against the wall or find shelter within the nearest doorway.

Overhead are narrow iron-barred balconies brilliant with geraniums, the flower pots carefully tied to the bars. The walls are blindingly white, the strip of sky above vividly blue. The buildings are from three to five stories in height, the homes being mostly above the ground shops. Balconies and roofs serve as breathing places.

Some of the larger houses have patios, but spacious inner courts are hardly to be expected in a city where nearly 80,000 people are crowded into an area covering less than three-fourths of a square mile.

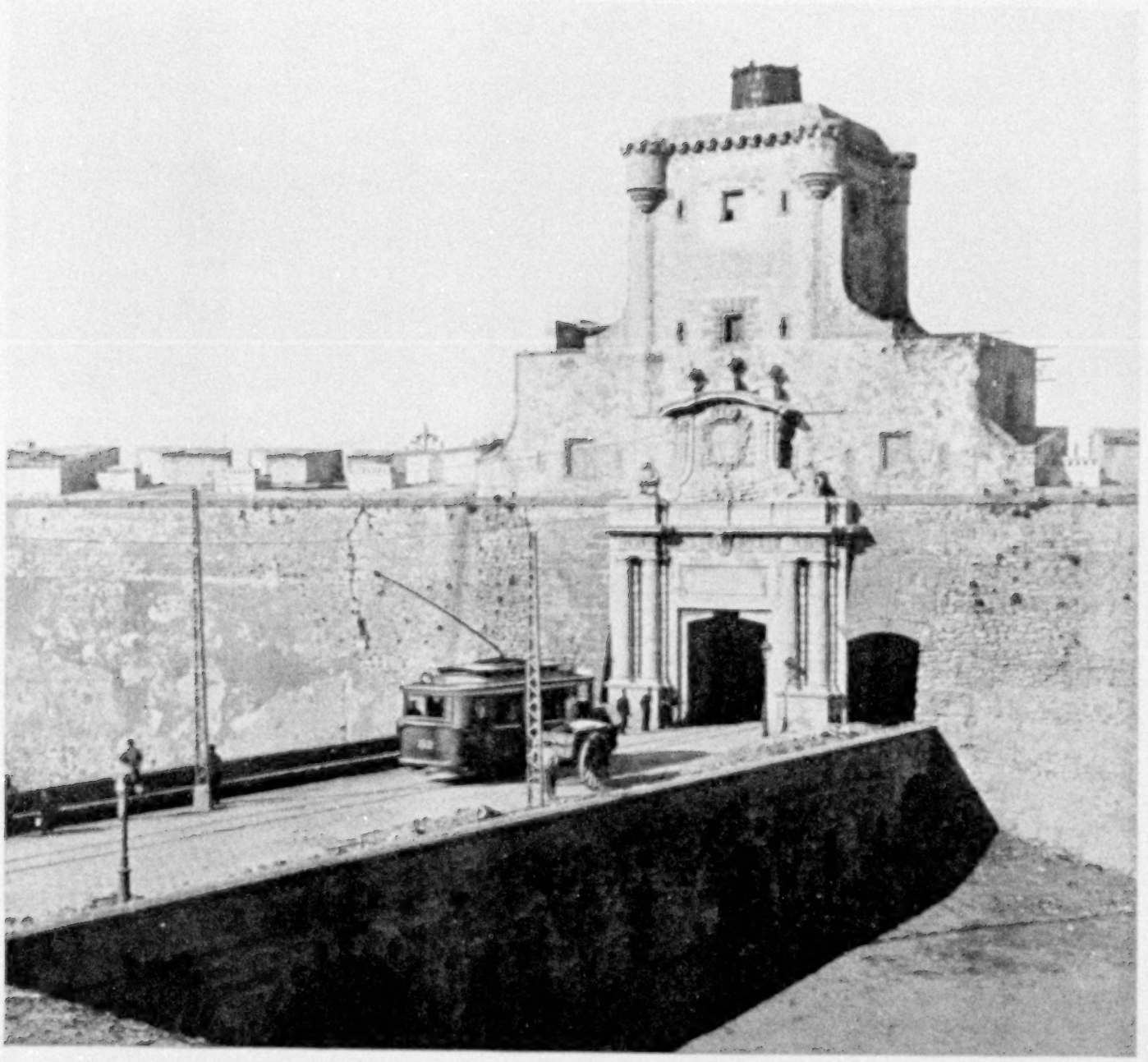
The city is not without its parks, the Parque Genovés by the sea-wall being especially attractive (see page 203).

Walking or driving just before nightfall is a custom in nearly every Spanish city. Dinner is served very late, 9 o'clock being the popular hour.

In the winter the poor children have rather the better of it. If there is any sun, it shines on the long row of tenement houses facing the sea. Here loll the goats, back from their morning walk through the city, having delivered fresh milk in person. Some of these animals know their routes so well that a goatherd is hardly necessary.

Cádiz is not a city for sight-seers. It holds no such remarkable monuments as are to be found in Seville, Cordova, or Granada. Within this limited area the very old buildings have been effaced. The cathedral is imposing, but lacks the age and beauty of countless other Spanish churches. In the Church of the Capuchins hangs Murillo's last painting. He fell from the scaffold while working on it and died from his injuries.

There are no more conservative people



Photograph from Harriet Chalmers Adams

THE LAND GATE (PUERTA DE LA TIERRA) TO CÁDIZ, THE ONLY ENTRANCE FOR THE HIGHWAY FROM THE MAINLAND

The railroad enters the city on artificial land a little nearer the bay. All who approach Cádiz must enter by this gate or by the "seagate" (the port) (see text, page 195).

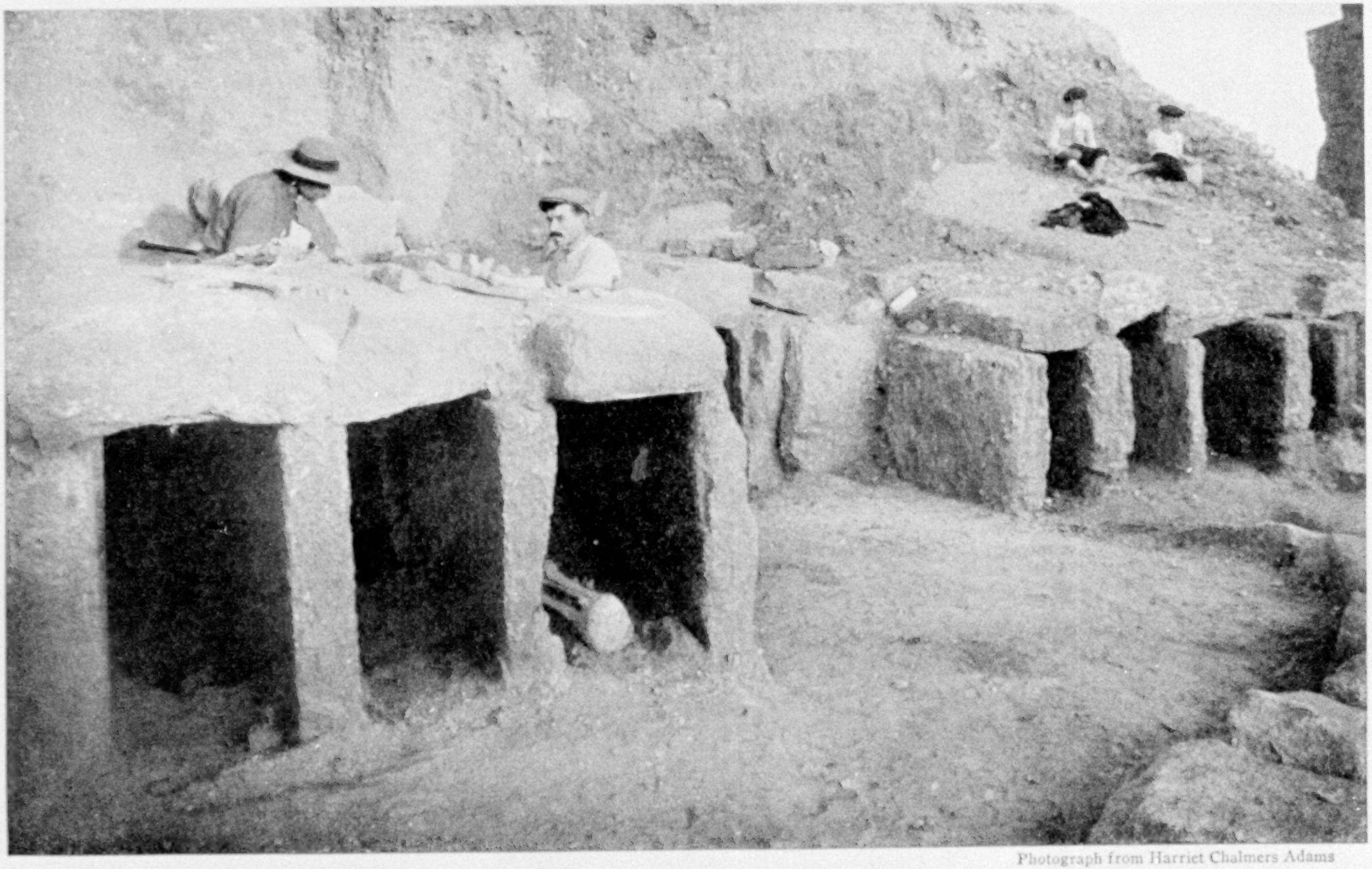
in the country than the *Gaditanos*, as the natives of Cádiz city are called. No lady goes out unaccompanied, no matter what her age. Black is the prevailing color of the upper class. The Spanish gentlewoman never wears bright colors on the street.

Outside of its matchless situation, the city's charm to the stranger lies in its distinct individuality, its ever-changing types. Through the land gate come the country people from beyond the causeway, their mules and donkeys laden with produce for the town market.

"Burrico! Burrico!" screams the old woman, perched on top of the heavily laden panniers of the small donkey whose ears protrude from under the load.

Behind comes a long string of *burricos*, carrying pine branches to the baker's oven. The mouth of each hungry little donkey is securely encased in a rope net that it may not graze by the roadside. It would not find much to eat on the sand spit leading to Cádiz!

Every mule and donkey carries some sort of talisman on its rope halter—a red tassel, a silver crescent, a bit of fur. The leader wears a clanking bell. The muleteer wears the stiff-brimmed, high-crowned felt hat so popular in Andalusia, called *El Ancho* (The Wide) (see page



Photograph from Harriet Chalmers Adams

PHŒNICIAN TOMBS UNEARTHED NEAR CÁDIZ

These burial places and many coins are practically the only relics of the Phœnicians who flourished here more than a thousand years before the Christian Era.

194). The women have black shawls over their heads.

Here is a group of bold-eyed, barefooted gypsy women, their entire fortunes in the gold and silver coins hung about their necks. They speak a poor Spanish. The Romany tongue, preserved in Spain up to a century ago, is now in disuse.

A wooden-wheeled oxcart, with a hood of plaited straw, is followed by a drove of cattle for to-morrow's beefsteaks. Next comes a big French touring car filled with handsome upper-class Andalusians, who have motored down from Seville. "All the world," as the Spanish say, passes through the *Puerta de la Tierra*.

Within the crowded city streets, charcoal and sweetmeat sellers jostle the shellfish vender with his flat wicker tray. The men who fry potatoes and big, greasy crullers have their booths in the little triangular plazas (see page 160). The streets never lack life save at midday, when shops close and everyone relaxes.

The uniforms of soldiers, policemen, and civil guards lend color. The *guardias civiles* are the aristocrats of Spanish soldiery—the neatest, trimmest fellows in the land. They wear a comic-opera type of headgear of shiny black leather with a flare-up in the back. Mounted or on foot, always in pairs, they are conspicuous figures at railroad stations, steamer landings, wherever crowds gather, or patrolling the country roads.

CÁDIZ IS SPAIN'S CHIEF ATLANTIC PORT

With its splendid harbor and modern docks, the peninsular city is Spain's chief Atlantic port. There are two large shipyards outside the walls, but they were idle at the time of my visit.

It was while laying out one of these shipyards, in 1890, that the second of a series of great archeological discoveries was made. Three years before, while leveling the ground for the Maritime Exposition, the first of the tombs were unearthed (see page 198).

These proved to be of the earliest Phœnician period. The most important find was a tomb containing the marvelously carved marble casket of a priest of the Temple of Hercules, which once stood on a shore of Cádiz Bay. For years Dr. Pelayo Quintero Atauri, one of Spain's foremost archeologists, has been laboriously patching together the fragments of this strange story from out the mists of the past.

There was, it seems, long centuries ago, a smaller island very near to the land on which Cádiz now stands. Either on this smaller island or at the base of the present peninsula stood the temple of a race of sun-worshipers, whose high priest made human sacrifice. It is the likeness of this priest, carved on the lid of the marble sarcophagus, that I have seen in the Archeological Museum in Cádiz.

It is a most wonderful sarcophagus. So skillfully is the figure carved that the man himself seems to lie before you. His features are Semitic—eyelids heavy, lips full, nose curved. The curly hair and beard are Assyrian (see page 200).

He wears a long tunic and his feet are bare. His left hand holds a human heart; his right is in the position to hold a knife, although no knife is there. Thus is the priest depicted in the supreme moment of sacrifice.

The marble probably came from Almería, on the Mediterranean coast of Spain. The sculptor was, perhaps, a Greek, who carved the figure during the priest's lifetime. Within the casket a skeleton was found.

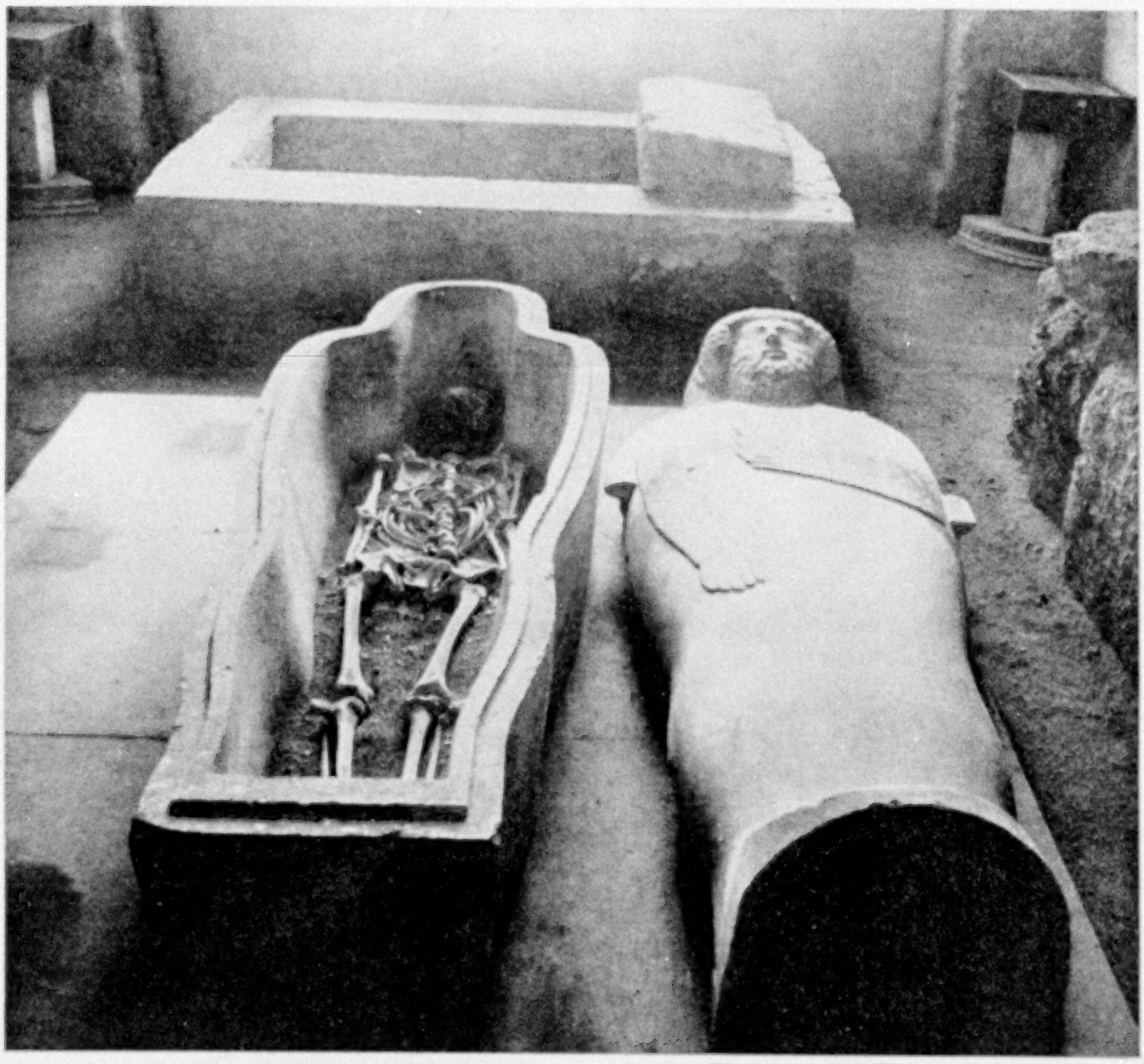
In this and in many other tombs since unearthed have been found beautifully engraved gold amulets, necklaces, bracelets, and funeral rings. One of the seal rings carries an inscription as yet untranslated. From the careful study of jewelry, weapons, and pottery, the Cádiz scientist has made many deductions.

The temple still existed in the days of Augustus. Strabo wrote of it; so did Pliny the Younger. The story of those who founded it, those who for long centuries preserved it, is a fascinating one to unravel.

SAN LÚCAR HOLDS MEMORIES OF COLUMBUS, DE SOLIS, AND MAGELLAN

The road from Cádiz to San Lúcar follows the bay curve and the seashore to the mouth of the Guadalquivir River. Here the town of San Lúcar de Barrameda stands.

It was when I began reading, in Spanish histories, of New World colonization



Photograph from Harriet Chalmers Adams

A PHŒNICIAN TOMB, PROBABLY THAT OF THE FIRST HIGH PRIEST OF THE PHŒNICIAN COLONY IN CÁDIZ

A marble sarcophagus of from 1400 to 1100 B. C. was discovered in 1887 while leveling the ground for the maritime exposition outside the city walls. The sculptured figure resembles an ancient Assyrian (curls), while the features are Semitic. The tomb probably stood in a niche of the Temple of Hercules. It is thought that a Greek sculptor was employed to create this figure in advance of the priest's death.

that this port first came to my notice. It was only natural that the caravels, putting out from Seville, should cast anchor at the river's mouth before plunging across unknown seas.

In the old walled town, built on a hill where sea and river meet, the mariners came ashore to fill their water casks and offer a last prayer to "Our Lady of Buenos Aires," who tempered the winds and brought many a bark to safe haven. This little image, before whom many a daring sailor humbly knelt, may still be seen in Seville.

Columbus sailed from San Lúcar on his third voyage to the Americas. From here de Solis embarked on his voyage of discovery to Rió de la Plata. On the sandy beach, where the fishermen drag in their nets, Magellan stood. Across the bar his ships set sail for the strait which bears his name.

I have followed Magellan around the world—through Fuegian waters, across the western ocean, to that lonely coconut-fringed island of the Philippines where he lies. After his death his pilot, del Cano, kept on around the world, to arrive

Photograph by George R. King

THE ORANGE MARKET OF CÁDIZ

Photograph by Orlando J. Root

THE NEW CATHEDRAL OF CÁDIZ FROM A DISTANCE

This monumental structure was in the course of construction for more than a hundred years. Its great dome rises to a height of 170 feet. The less pretentious old cathedral, originally built by Alfonso the Wise in the thirteenth century and rebuilt after its destruction in the siege of 1596, lies just beyond.

OVERLOOKING THE HOUSETOPS OF CÁDIZ

The lovely city is greatly circumscribed in area, so that it has had to expand upward, after the manner of lower Manhattan Island. The many white skyscrapers against the background of blue sea caused the travel writer De Amicis to say that Cádiz could best be described by writing the word "white" with a white pencil on blue paper.

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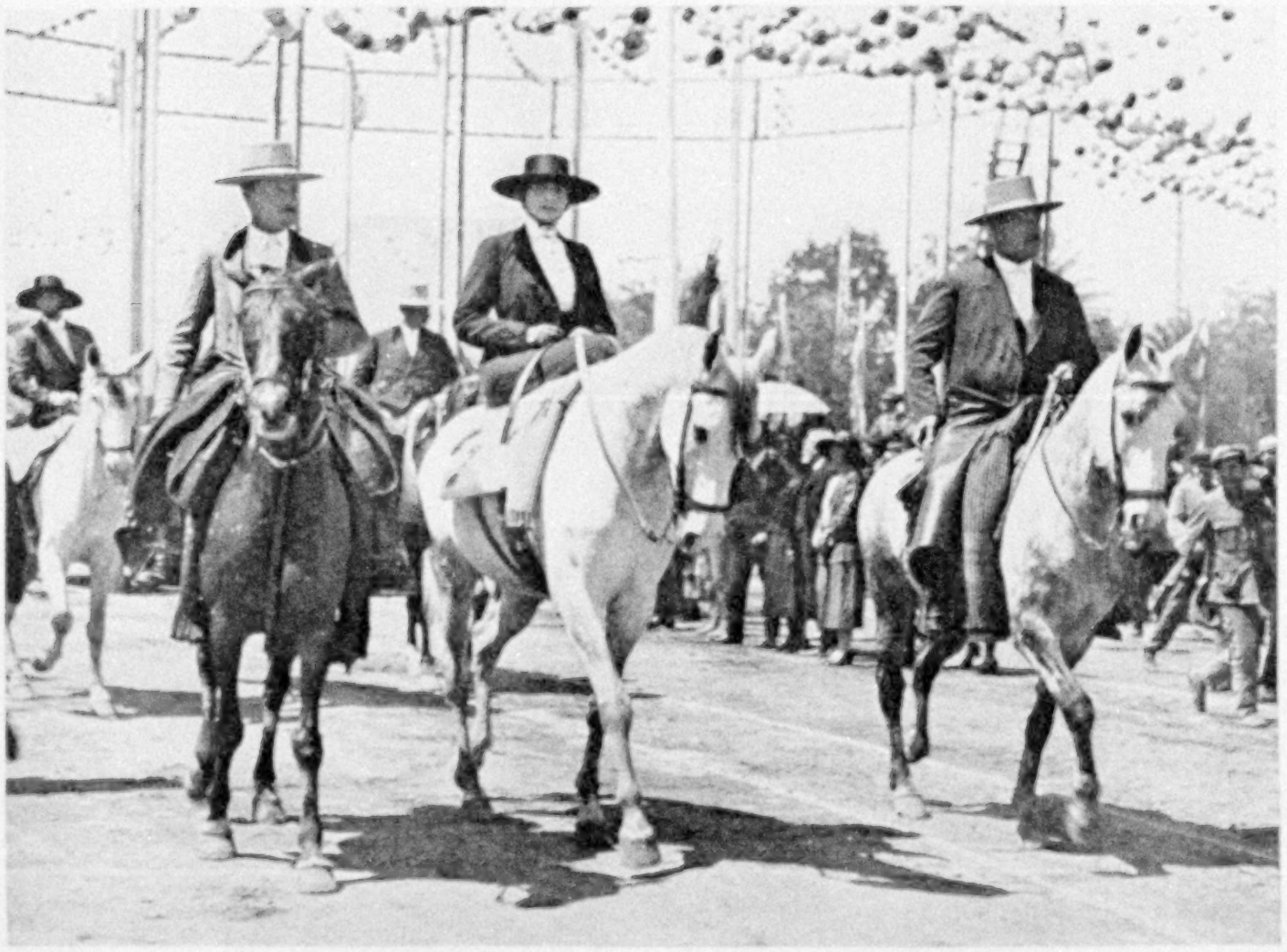
Photograph from Harriet Chalmers Adams

THE PARQUE GENOVÉS OF CÁDIZ BORDERS THE SEA

This lovely palm garden derived its name from the Italian merchants who formerly had their warehouses here.



Photograph from Harriet Chalmers Adams

THE QUEEN OF SPAIN AT SEVILLE DURING FAIR WEEK, WEARING THE ANDALUSIAN "MALE" HAT

at last, with one trusty little ship, off San Lúcar.

Before Magellan's day San Lúcar was a Moorish town. It is the only place in Spain where I have seen, in a perfect state of preservation, a little white mosque of the exact type found to-day in Morocco. Too small to be utilized as a Christian church, it lies forgotten. In the midst of another civilization, it stands as a mute reminder of those centuries of Moslem rule.

Foreign visitors are such a novelty in San Lúcar that an army of young sons of Cádiz followed me, and the fishermen ceased mending their nets to gaze at the mad lady with the picture machine running up and down the sun-drenched beach.

Only those who know and love Spanish America and those parts of our own country which once belonged to Spain can fully appreciate all this one sleepy little port has meant to the Western World.

Over this shimmering bar went the pioneers—the fathers and many of the mothers, too, of the Latin American race; went the first cattle, horses, mules, donkeys, sheep, hogs, and domestic fowls. Trees and plants, rare gifts from the Old World to the New, left the port of San Lúcar.

When I thought of all that the Americans, North and South, owe to Spain, and to this one little town, I felt that I, too, should look for a shrine on which to place a flower.

The Guadalquivir marks the western boundary of Cádiz province. In spring, when the African marshes give up their winter visitors, the river delta teems with myriads of waterfowl.

I sailed from Cádiz on a day when the sea was as blue as the sky. Like the sailors of old, my face was toward the west. Like them, I looked back on the shores of Spain. When all else had faded, I could still discern the gleaming white peninsular city adventuring far out into the blue.

FROM GRANADA TO GIBRALTAR—A TOUR OF SOUTHERN SPAIN

By Harry A. McBride

Author of "The Land of the Basques," "The Land of the Free in Africa," etc., in the National Geographic Magazine

THE Moors made all of Andalusia the center of a wonderful civilization. In this they were aided, of course, by the enormous natural wealth of the soil and by a matchless lavishness of sky, sun, and moon.

These latter elements contribute in no small degree to the far-famed brightness of the Andalusian character of to-day.

The traveler will visit renowned monuments here, and between times he may be sure that the people who pass before him will not let his interest lag.

If he can be borne with the tide, enjoying the flowers, the azure sky, and the sympathetic and rather happy-go-lucky Andalusians, he will want to return and retrace his footsteps again and again. But heaven help him if he is in a great hurry and attempts to carry out his New World punctuality and efficiency of program!

No matter which way one may be traveling in southern Spain, the little station of Bobadilla will soon be encountered. And thereafter it will surely bob in again with considerable persistence, because at Bobadilla, which would otherwise have no fame of any description, the main lines cross—the railway from north to south and that from east to west. Therefore, be it from Gibraltar to Granada, from Málaga to Seville, from Cordova to Cádiz, everyone halts and nearly everyone must change trains at this little station (see map, page 126).

Furthermore, since Andalusian trains, as a rule, are in no untimely rush to arrive at their destination, the stop at Bobadilla is usually long enough to enable the traveler to partake of a satisfying meal in the station restaurant.

Three very long tables extend down the length of the big tiled-floor room, at each one of which fully 50 places are set, with gleaming white tablecloths, vases of bright flowers, dishes of tempting fruit, and spotless napkins coiled spirally in the wineglass at each place. A corps of agile waiters in long white aprons, rushes expertly about, filling the hurried wants of the guests, as the whole trainload of passengers comes pouring out of the compartments into the dining hall.

The Traveler's Menu at Bobadilla

A steaming hot soup, a *tortilla* (omelet) of eggs, potatoes and ham with sweet peppers, or fine fresh fish from Málaga, the roast of chicken or veal, a dessert which is likely to be—if one is fortunate—a piece of luscious *torta real* of almond paste and sugar frosting; and then, most delicious of all, there is passed down the long table the fruit dish, piled high with fresh figs, muscatels just picked from the vineyards, peaches, apples, and plums.

Then there are melons of various kinds—and all this, with the half bottle of *vino tinto*, for the fixed sum of five pesetas (less than $1.00). One does very well at the Bobadilla restaurant!

The demi-tasse has just been served when there comes a warning call in a high singsong voice:

"Señores viajeros al tren!"

And the train leaves for the south amid much bell-ringing, whistle-shrieking, and slamming of compartment doors.

Bobadilla itself is high on a plateau surrounded by gray mountains of a barren and forbidding appearance; but the train soon enters the valley of the Guadalhorce, a little stream which has succeeded in cutting a deep chasm through the mountain range, seeking its way to the sea.

Judging from the results, the railway engineers had almost as much difficulty as the river itself in finding a way through. The train plunges into a short tunnel to emerge with a roar onto a bridge strung high over a terrifyingly deep ravine. One catches a glimpse of huge boulders clinging to the sides of the seemingly bottomless cut, and, looking

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OFFERING FRUIT TO TRAVELERS AT A STATION IN SOUTHERN SPAIN

Figs, peaches, apples, plums, and muscatels delight the tourist in Andalusia, which is noted for its fertility, because the Moorish love of water led to the construction of elaborate systems of irrigation. Among the vineyards, olive orchards, and orange groves, deep water channels and oriental water wheels are features of the landscape.

Photograph by J. Ortiz

AN ORCHARD OF JORDAN ALMONDS

This variety of almond is elongated in shape, whereas the more common varieties are flat and rather round. Thousands of boxes of Jordans are shipped annually to American markets from the Málaga district. The trees bloom in January, the white blossoms appearing before the leaves, and an orchard at that time is a lovely sight.

Photograph from Harry A. McBride

HARVESTING ALMONDS

The farmer usually spreads canvas under the tree and carefully knocks the nuts off with a pole. His family gathers them, and cracks and shells them in the farmhouse. The almond is the heaviest nut crop in Spain.

© Publishers' Photo Service

A VILLAGE STREET IN SPAIN

The responsible and honorable position of the pig in Spain is evident from the great herds, for the most part black in color, which are found with their keepers in the Andalusian wilds. The swine of Estremadura are fed on sweet acorns and are considered the best in the country.

Photograph by Angel Rubio

COUNTRY TYPES IN A MÁLAGA CAFÉ

high above, sees the blue sky of Andalusia. The cut itself is as deep as a skyscraper is high and no wider than a narrow street (see page 226).

It is a fleeting picture, because the train immediately plunges into a second tunnel, only to span still another ravine of rocks a moment later. At Chorro, where there is only room for the station and freight-shed between two tunnels, the chasm is blocked, the water dammed by a remarkable piece of engineering, and made to supply electric power and light to Málaga and its environs, and to irrigate the rich *vega,* or plain, near the provincial capital.

There are 11 tunnels in all, and had the railroad management the American advertising instinct each train would stop a minute on one of those lofty bridges to give our eyes a chance the better to record the wonder of such a sight. Not even the busiest business man could begrudge this one little minute, especially when we consider that the train always gets to Málaga late, anyway.

"NINETY MINUTES OF TARDINESS"

This daily *correo,* or mail train, was due at Málaga at 5:30 p. m. I recently had to meet a friend coming from England and, knowing the way of this train,

Photograph from Harry A. McBride

HOLY WEEK IN MÁLAGA

Some of the sacred images are enormous in size, rich, and elaborate. Málaga disputes with Cádiz the honor of being the oldest seaport in Spain. Its name is believed to be derived from the Phœnician word *malac*, meaning "to salt," because it was a depot for salt fish (see page 216).

got down to the station at 5:45. No sign yet of its arrival.

"How late is the correo?" I asked one of the station masters.

"Ah, Señor," he said, "it left Bobadilla with 90 minutes of tardiness to-day."

So I went home to dinner and returned later in the evening to meet my friend.

After the line passes through the last tunnel it comes suddenly out upon the vega, a veritable garden of soft green luxuriance. On every hand are oranges, palm trees, bright afternoon sunshine, and the ever deep-blue cloudless sky of the Mediterranean countries.

An hour before, we had left peasants moving along the wind-swept mountain roads on donkeys, heavily dressed, their woolen scarfs pulled tightly round the neck and across the face, so that only eyes were visible. Snow had been on the mountain sides. And now all this suddenly gave place to orange trees and oleanders.

The train passes through Alora, where many attractive villas may be seen—pink and green and light-blue villas, with window boxes of red geraniums and balconies full of bright trailing flowers—the summer homes of Málaga families.

At the station we may also see, in early November, great piles of oranges and lemons, around which sit many women and girls, wrapping each fruit in soft paper and packing it in boxes for shipment to London and to the marmalade-makers of Dundee.

Then we stop at Churriana, another settlement of summer homes, nestling on a hillside in this vast green garden. The hill completely hides Churriana from the sea, and it is said that many people moved there in 1898, when it was rumored that Yankee gunboats were to bombard the city of Málaga!

MÁLAGA: CITY OF SUNSHINE, LAUGHTER, AND MUSIC

Suddenly a bend is rounded; broad blue waters of the Mediterranean spring into the picture. Another ten minutes and we arrive at Málaga, the capital of the province, the see of a bishop, and the fifth city of Spain.

In this lovely spot Nature has lavished much care. It rains only 52 days in the year, the other 313 being blessed by brilliant sunshine, tempered in summer by fresh sea breezes.

We are now, of course, in Andalusia, where jokes, laughter, and music abound.

This port is surely one of the world's most successful sources of supply for exacting gourmets and connoisseurs. Where could another be found that would furnish such variety of good things to eat? During the fall months every berth is occupied and steamers await their turn in the outer harbor, every winch rattling and swinging up over the sides and down into dark holds boxes, crates, and barrels of choicest delicacies. Ships are bound for New York, Liverpool, New Orleans, Antwerp—and there is even cargo marked Wellington and Reykjavik.

Photograph from Harry A. McBride

A RELIGIOUS PROCESSION AT MÁLAGA

These processions pass through darkened streets at night during Holy Week, and are awe-inspiring in their solemnity and religious fervor. The images are carried on the shoulders of "penitents" dressed in strange uniforms (see text, page 221).

The quays are crowded with huge piles of cargo. In one may be counted 12,000 boxes—200 tons—of almonds for one New York-bound steamer, all shelled and awaiting only the blanching and salting for your table. Of those sweet Jordans some are so large that 12 will weigh an ounce.

Another mountain of boxes contains muscatel raisins as big as quarter dollars and so delicate that no machine has ever been invented that will seed them. If the skin is only slightly pricked, the raisin soon becomes a mass of sugar.

Little half-barrels are full of the finest Málaga grapes, packed in cork shavings, for our Christmas dinner; and there are thousands and thousands of crates of oranges, lemons, and tangerines; also boxes and barrels of rich olive oil, some of which is used by our Pacific Coast salmon packers in preparing their product; and little boxes and baskets of pressed figs, crates of pomegranates, melons, custard apples, and sweet potatoes.

Barrels of that deliciously sweet muscatel wine are marked London, Havana, and Buenos Aires, but none for New York. There are bags of sweet-smelling

Photograph by Harry A. McBride

A BIRD'S-EYE VIEW OF A BULLFIGHT

Every Sunday afternoon from early spring till late autumn the Gibralfaro hill at Málaga is crowded by "fans" who do not have the price of admission to the ring. Nevertheless, they get a good, though rather long-distance, view of the fight.

MUSEUM

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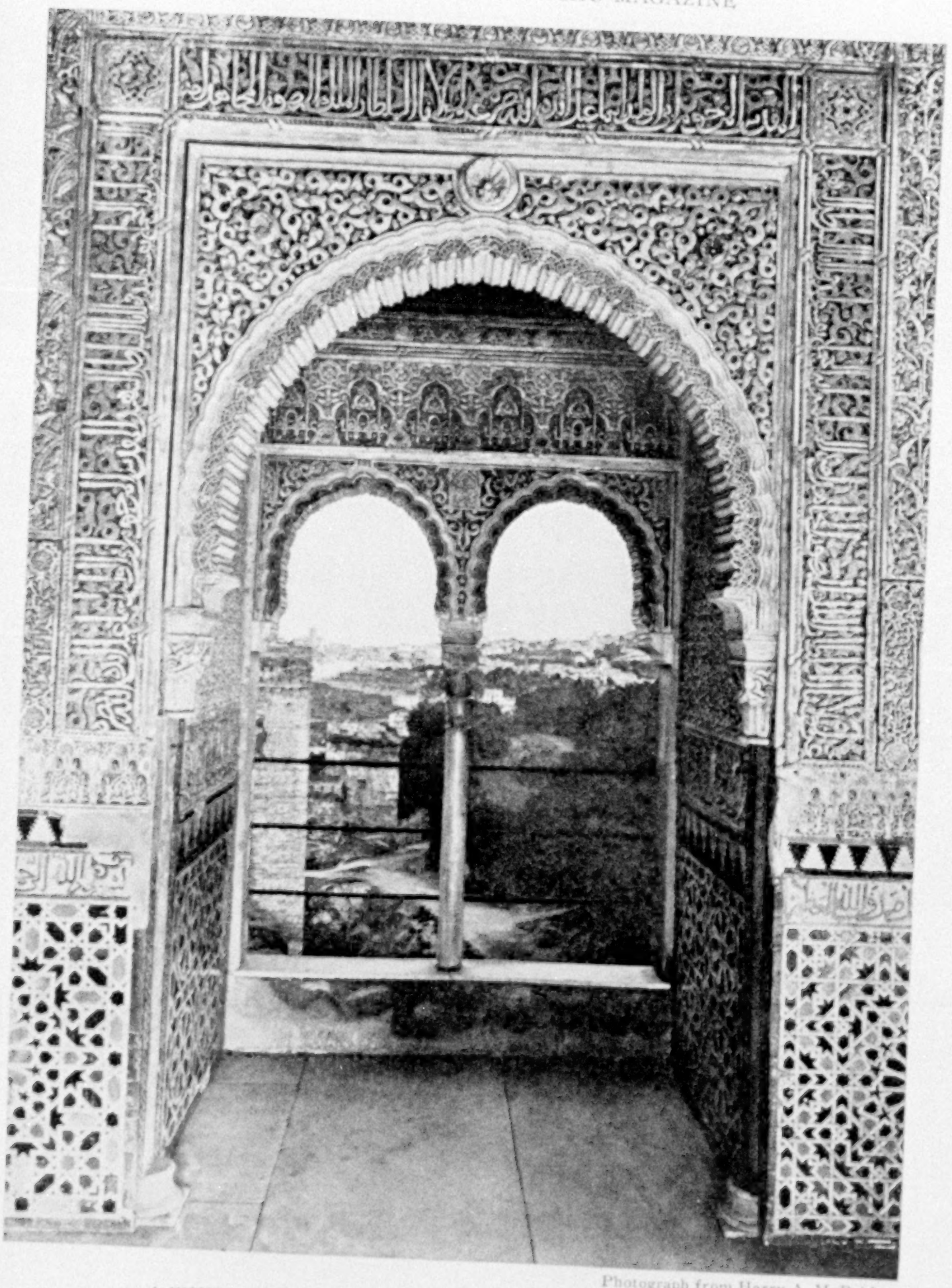
THE FORTRESS-PALACE OF THE ALHAMBRA

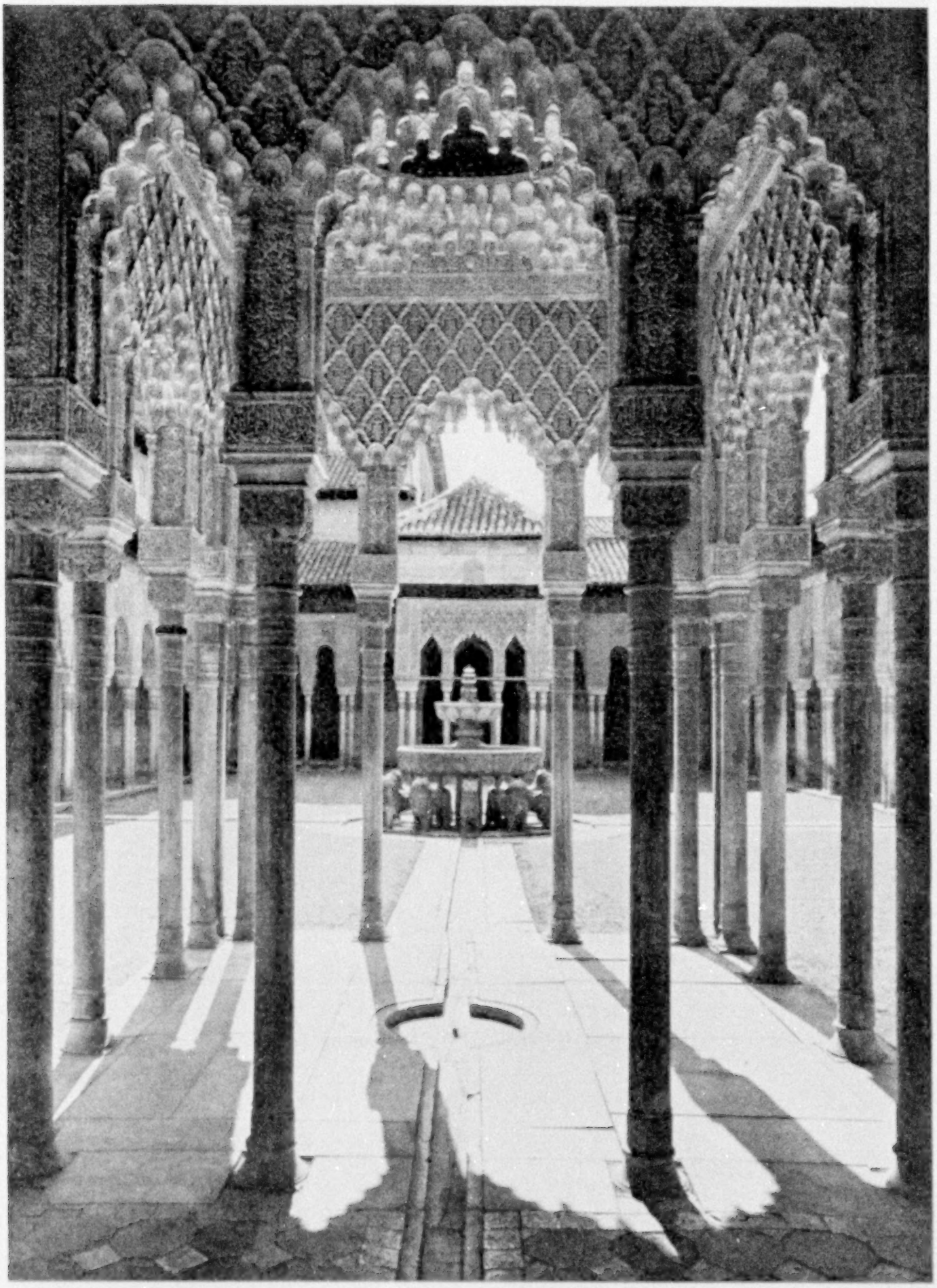
This architectural glory of ancient Granada has three divisions—the citadel proper, the palace of the kings, and the quarters of the officials. The Alhambra hill, some 2,690 feet long and 730 feet wide, is completely encircled by walls, around which is grouped a fair-sized village (see text, page 227).



Photograph from Harry A. McBride

A WINDOW IN THE TOWER OF COMARES OF THE ALHAMBRA

On each side of the Hall of the Ambassadors, which occupies the interior of the Tower of Comares, is a Moorish arched window divided into two lights by a slender column. The immense thickness of the walls is shown by the depth of the window recesses (see text, page 225).



© Herbert G. Ponting

THE COURT OF THE LIONS, IN THE ALHAMBRA

This is the center of the winter palace of the kings and takes its name from the 12 marble lions bearing the large fountain basin. The lightness of the court's 124 columns, its grace of proportion, its variety of fretwork, and its "half-orange" wooden roof make it notable.

© Herbert G. Ponting

GRANADA VIEWED FROM THE GENERALIFE PALACE

This famed summer residence of the Moorish rulers was once the property of a Moorish noble, who bequeathed it to his king. Its name signifies "The Garden of the Architect." Its terraces, grottoes, waterworks, and hedges come down from the Moorish period and resemble the park of an Italian villa of the Renaissance.

aniseed, and even extract of thyme, lavender, and rosemary, for milady's toilet.

And while all this is happening on the quays, at the railway station, in November and early December, crates of fresh beans and tomatoes are being carefully packed in express cars to be rushed to Paris epicures, to be followed by strawberries in March and April.

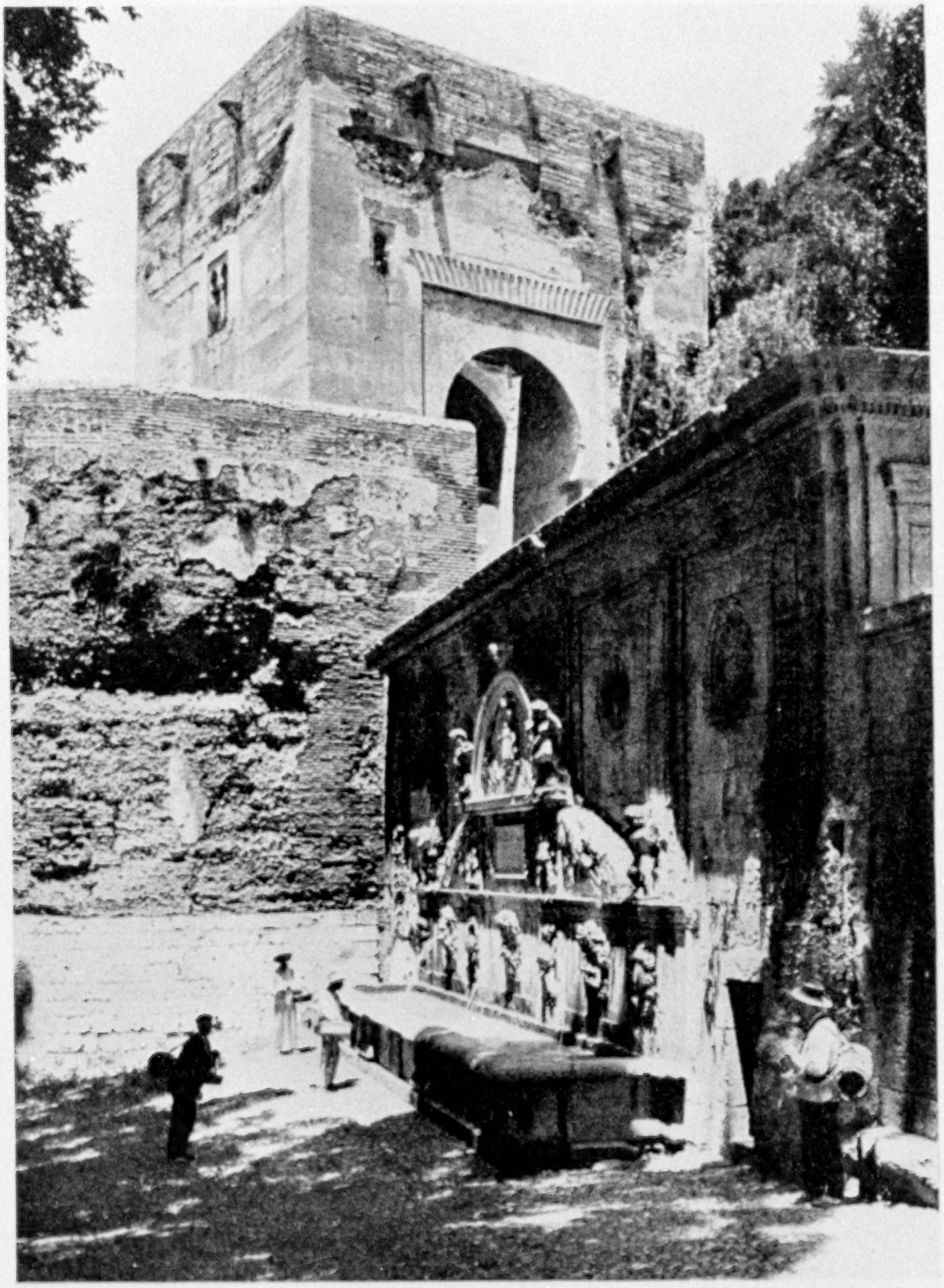
MÁLAGA'S FISHING INDUSTRY IS FAMOUS

The same train will carry, nearly every day of the year, refrigerator cars full of fresh fish for the Madrid market. The fishing industry is justly famous. Indeed, the Phœnicians named the place Malaca, from their word *malac*, which means "to salt," because it was their depot for salt fish.

The fishermen are extremely picturesque, trotting gracefully down the narrow streets crying their wares. They carry two flat baskets fastened to a rope which goes over their shoulders and is of such length as to allow the baskets to swing about a foot off the ground. Their arms are always set akimbo and the rope held outward by their elbows, so that the baskets will not strike against their legs.

Their methods of fishing are medieval, but efficient. They go out in small lateen-rigged sailing vessels for sole, whiting, and mackerel, and still farther afloat in steam trawlers for the larger tunny.

The greatest number of fishermen, however, devote themselves to the smaller fish—sardines and the delicious *boqueroues* (anchovies), near shore. Two rowboats pull out from the beach and spread the large net, in the shape of a gigantic U, with the two ends pointing shoreward.



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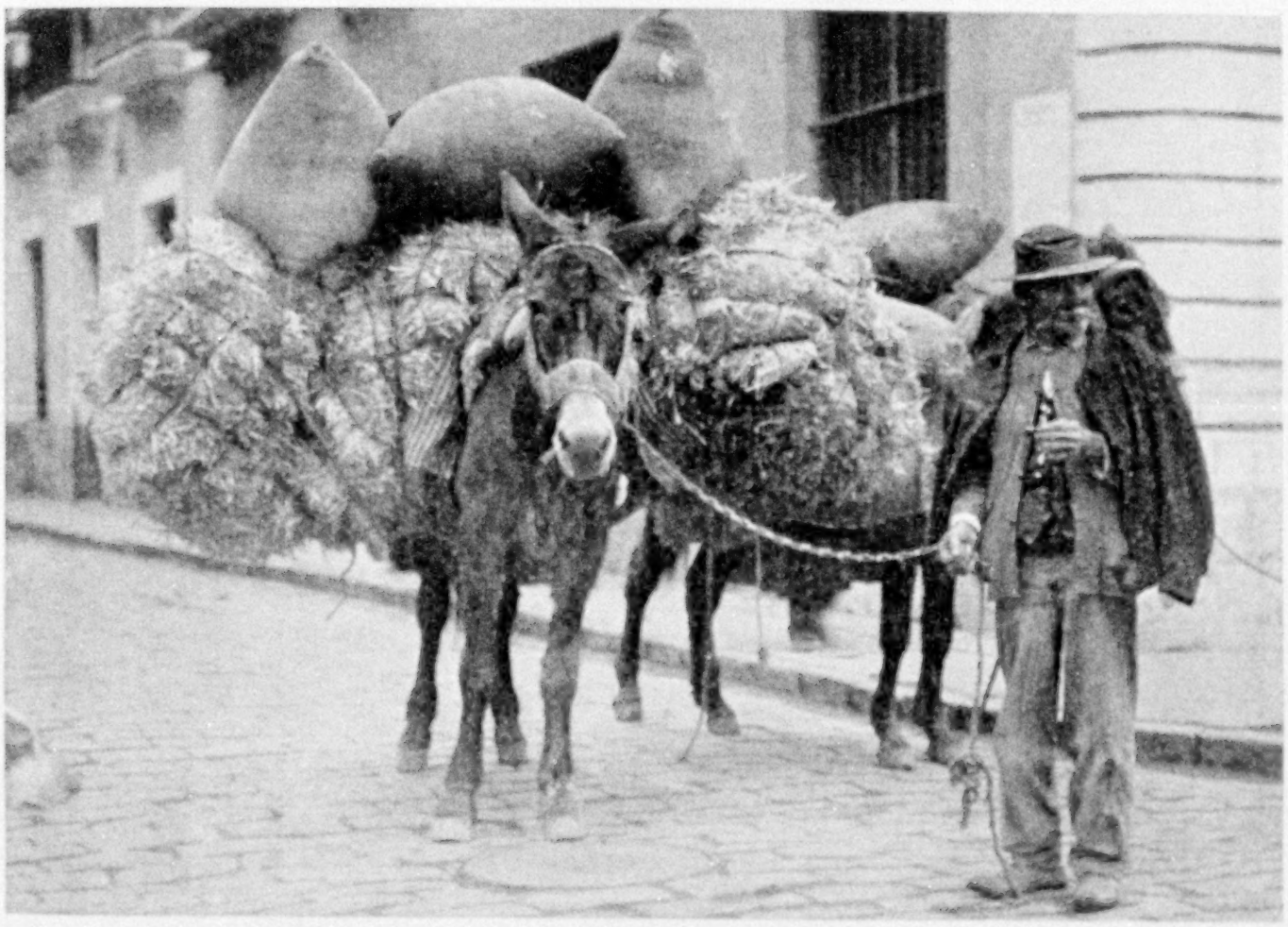
THE FOUNTAIN OF CHARLES THE FIFTH : GRANADA

This Renaissance fountain was erected in 1545. It is adorned with the motto of Charles V of Spain and with heads carved to typify the three rivers of Granada—the Darro, Genil, and Beiro. The entrance tower to the Alhambra is seen in the background.



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A LOAD OF HAY FROM THE MOUNTAINS NEAR GRANADA

Legend says that the flowers, sunshine, and soft breezes of Andalusia delighted St. Lucia when she was seeking a country over which to rule and which had not already been apportioned to some saint greater than she. "This is Paradise! I must dwell here!" she exclaimed. Then a voice said to her, "Anda, Lucia!" (Go there, Lucia), and ever since this region has been called for her.

The net is marked with inflated goatskins floating on the surface.

Then they bring ashore the two ropes, one attached to each end of the net—1,600 fathoms of rope and 120 fathoms of net.

Ten or twelve men pull and strain at each rope, sometimes for half an hour before any effect is seen. Gradually the far-away net begins to answer to their combined strength, and slowly it is pulled in.

Barefooted, trousers rolled to the knee, shirt open on the strong chest, wide red sash wound round the waist, and a broad-brimmed hat with round-peaked crown—this completes the fisherman's costume.

EVERY FISHING BOAT HAS TWO EYES

Every boat is fancifully colored and has an eye painted on each side of the bow; for these simple folk are superstitious, and, anyway, how can a boat see a school of fish if it has no eyes? The *Virgen del Carmen* is the patroness of the sea, and to her a prayer is always offered before the boat is launched, supplicating that "we kill a great multitude of fish."

When the net is being drawn in and nears the shore, and thousands of little sparkling silvery fish may be seen leaping about in it and struggling in one huge mass of flapping fins and tails, the fishermen call down blessings upon the Virgin. What a wonderful saint she is! *"Qué bondadosa, Viva la Virgen del Carmen!"* No words are sweet enough to describe her wondrous kindness and her marvelous powers.

But if the net nears the shore and there is no mass of jumping silvery fish—only half a dozen sea crabs and a handful of sardines—there are many harsh pronouncements, which heaven forbid that you should read.

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A MANTILLA IN THE MAKING: GRANADA

The justly famed Granada lace is made of silk tulle stretched on large frames. Girls of from 10 to 14 years of age weave into it varied designs for handkerchiefs, tablecloths, curtains, and the national *mantillas* (see text, page 225).

Málaga and its neighborhood are likened to southern California by all Californians who visit it—that is, its natural beauty, its flowers and sunshine. Its finely laid out Parque along the harbor, with a very wide avenue of palms and towering plane trees running through it, is the center of festivities at carnival time. Then it becomes knee-deep in confetti, flowers, and serpentines thrown from motor cars and cabs by joyous *máscaras* (masqueraders) bedecked in gay Spanish shawls and other costumes befitting the occasion, amid shouts of laughter and songs of revelers mad with joy.

Then there is the Calle de Larios, Málaga's one wide modern business thoroughfare, and the Alameda, lined with little iron tables and chairs, the whole street a year-round outdoor café under the plane trees.

IMPRESSIVE PROCESSION DURING HOLY WEEK

Through the Calle de Larios pass all the religious processions of Holy Week.

Photograph from Harry A. McBride

GYPSY CAVE-DWELLERS AT GRANADA

Just outside the town is a large settlement of Gypsies living in caves dug in a mountain side and presided over by a "king" (see text, page 227). Rooms and suites are hollowed out of the rock. The Gypsies make their living by horse-trading, horseshoeing, and by manufacturing brass utensils for the tourist trade. Some are also engaged to entertain visitors at the hotels.

These are held at night, and closely rival, and, at least in solemnity and religious decorum, possibly surpass, even those of Seville (see page 210).

The streets are darkened, no vehicle is allowed to circulate, the women are in black mantillas, and there is an awe-inspiring hush, as the dense crowd patiently awaits the spectacle.

A blare of trumpets is heard, a vanguard of the Guardia Civil, on superb horses, slowly rounds the corner, followed by two lines of weird "penitents," each carrying a candle torch.

These two lines of bobbing lights add mystery to the scene. The penitents of each brotherhood are dressed in some distinct uniform, such as tall, tapering, conelike caps, with two holes for the eyes, extending down to cover the face, and the figure hidden in a long gown of white (see page 211).

Then a blaze of light slowly comes into view. A marvelous image, carved in wood, shining with gold, silver, and costly gems, is borne along on a platform, upon the shoulders of other penitents.

Some of the images are so large and heavy that 100 men are required to carry them.

These processions date from the fifteenth and sixteenth centuries and were started by religious brotherhoods, who undertook to safeguard images in various churches. Thus to-day each church has its famous *Virgen* or *Cristo*, and in Holy Week it is carried through the streets in solemn procession, the most solemn taking place on Friday, representing the funeral of Christ, and is held at midnight.

Spectators, wrought up to uncontrollable fervor and with tears streaming from their eyes, cry out heart-rending *saetas*, as the procession passes.

TRAFFIC IN THE STREETS OF MÁLAGA

Aside from the Calle de Larios, Málaga's other business streets are narrow and winding, and many of them are none too clean. They are crowded with Andalusian types: servant girls with market baskets on their arms, porters carrying anything from a trunk to a wardrobe on their backs, farmers in straight-brimmed, tall felt hats, girls in bright shawls, with the invariable flower in their hair, on the way to work in the almond and raisin stores.

Then there are milkmen leading herds of goats about the streets and generally appropriating the sidewalks for their own exclusive use. The donkey is the chief beast of burden, and the farmer loads the poor animal to the staggering-point and then climbs on himself.

I was once on a street-car going through the Calle de Granada, which is so narrow in parts that one must get into a doorway to let the car pass, when we stopped with a jerk. The motorman's arms began an imitation of an agitated semaphore, and he proceeded to shout all the words in the dictionary at some object in front.

I looked out and saw, in the midst of a gathering crowd, a large and well-laden donkey, in the exact middle of the track. His master was hitting him furiously with a stick. This treatment being without result, the farmer got behind, put his shoulder to the hip, and pushed; but the donkey only braced himself more firmly on his tracks. Finally, the motorman, the conductor, and one of the passengers also put their shoulders to the task and the obstruction was removed from the right of way.

As we passed, however, the animal held up his head and brayed at us in derision.

THE ANDALUSIAN LABORER A MAN OF GREAT STRENGTH

Compared with American standards, the Andalusian workman is undersized, but amazingly strong. He thinks nothing of carrying from his cart into a warehouse sack after sack of flour, each weighing 220 pounds.

In one of the almond stores the weighing scales are on the first floor, so that all merchandise must be carried up a sloping ramp from the street. In this store were two *peones*, rivals for the title of being the strongest in the employ of the firm.

One day a farmer arrived on a mule with a bag of almonds, and the first peon, seeking to prove his prowess, went down the ramp and presently appeared again with the bag of almonds on one shoulder and the farmer on the other.

But the second peon, not to be outdone, immediately ran down the ramp, and a moment later came staggering up again,

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A GYPSY DANCE NEAR GRANADA

The dances of the Spanish Gypsies are oriental in character and are performed only in the Gypsy quarters of Granada or Seville. In Granada Gypsy dancing is one of the characteristic sights, for which the unwary tourist pays a high tax (see text, page 227). Gypsies are known to have been settled in Granada as early as 1532. They now occupy a part of the Albaicin hills ("quarters of the falconers"), the oldest section of the city.

bearing upon his shoulders no less a burden than the mule itself!

From Málaga to Granada there are two ways to go by motor car, both routes over the mountains. The shorter road leads directly above the city, zigzagging and winding ever up and along frightening precipices until, in 45 minutes, one has ascended 3,000 feet and may see Málaga far below and, across the broad blue Mediterranean, the shores of Africa. The fishing boats at sea appear no larger than flyspecks, and the scene might be in fairyland itself.

SUGAR FACTORIES INCREASE INDUSTRY

But usually the traveler is dependent upon the railway, in which case he must first retrace his steps through the 11 tunnels to Bobadilla, dine again at the station restaurant, and change into another train for Granada.

On a recent trip to this mecca of tourists, I could find no guidebook of later date than 1901, and in it Herr Baedeker describes Granada as being to a considerable extent "full of filth and decay" and rather a "living ruin," where a "large proportion of the population subsists by begging alone." He wonders pessimistically if the sugar factories being started in an experimental way will increase industry and wake up the place.

The answer was very evident long before we reached the city. Baedeker's fears for the worst were happily unfounded. Soon after leaving Bobadilla we began to pass freight trains hauling car after car loaded with big brown sugar beets. There were huge piles at each station, and cart after cart full of beets, drawn by oxen, moving slowly along the country roads.

For Andalusia, it all looked unusually bustling and industrious. There are now a dozen or more flourishing sugar factories in the province of Granada employing the sugar beet as raw material, whereas next door, in Málaga province, there are several sugar factories where sugar cane is used. Yet, with all this, Spain imports sugar from Cuba.

PLAIN RESEMBLES VAST OLIVE ORCHARD

The vast fertile plateau from Antequera to Granada is picturesque in the extreme—rolling hills, with here and there an abrupt precipice, a deep cut, or a towering mass of bald gray rock to add to its rugged appearance. The hills are really small mountains, as they form the lower reaches of the Sierra Nevada.

This whole country seems to be an immense olive orchard. Thousands and thousands of the silver-green trees are planted in straight rows, running up toward the tops of the slopes. It would become almost as monotonous as traveling for hours through the grain-fields of our prairies, were it not for the ever-changing beauty of the hills.

Nearing Granada the snow-capped Sierra Nevada are ever in view, glistening like silver and cut crystal in the bright sunshine.

An hour outside the town a tramway began to parallel the railway, and soon a little yellow tram car moved by. Upon

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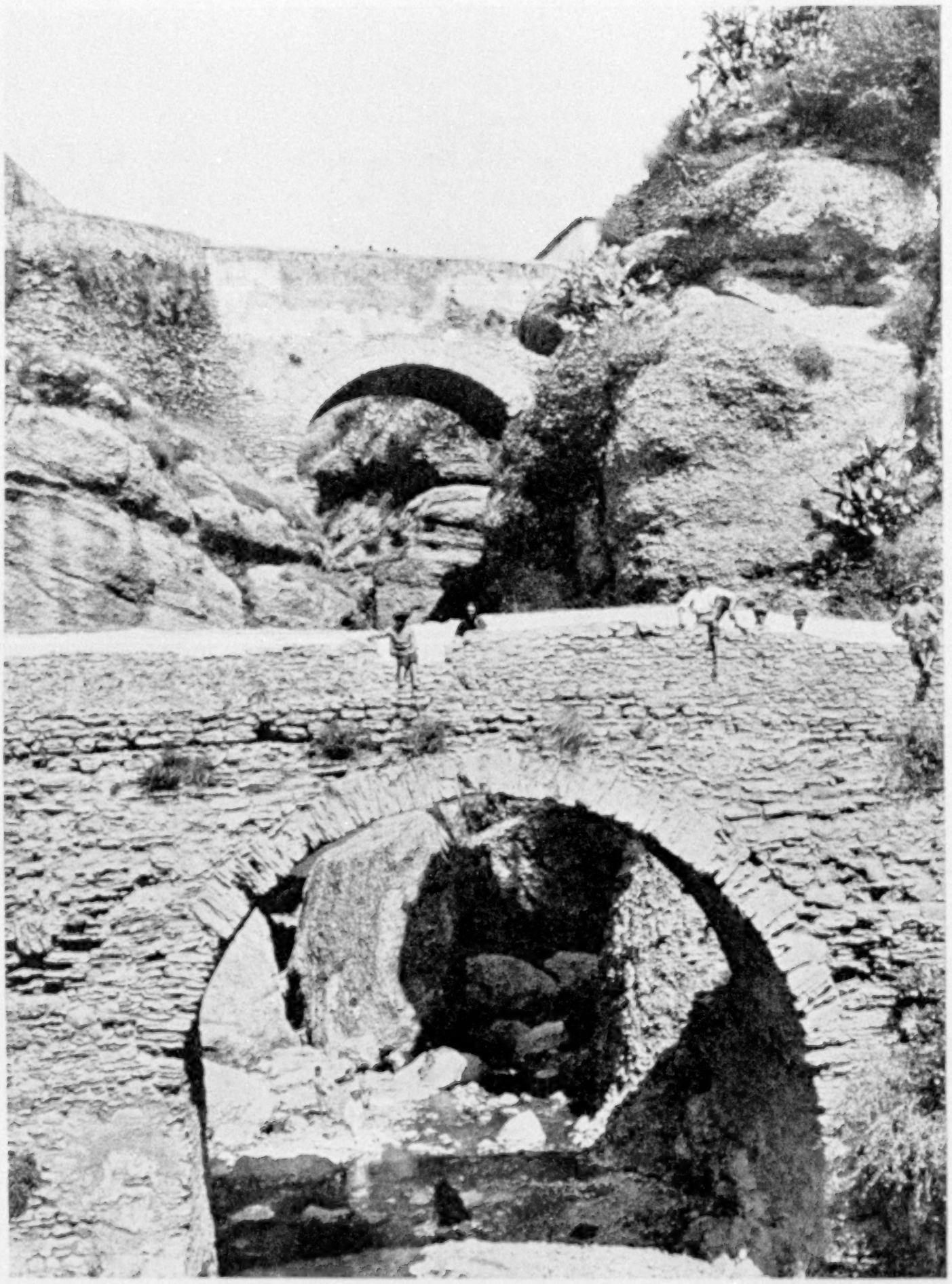
THE DAUGHTER OF A GYPSY QUEEN

She epitomizes the people described by Dr. Edwin Grosvenor in "The Races of Europe" as of "wiry figure, with black hair; large, shining black eyes, perfect teeth, and a glowing rich complexion."



Photograph from Harry A. McBride

THE ROMAN AND MOORISH BRIDGES AT RONDA

The deep gorge is spanned at different elevations by three bridges—the Roman, Moorish, and, at the top of the gorge, the "New" Bridge (see page 226). Ronda's lofty situation makes it a favorite summer resort for persons living in Gibraltar. Its annual fair is one of the most interesting in Spain and is noted for its bullfights.

entering Granada we saw these same trams pulling about the streets freight cars full of sugar beets, and in the Granada station we counted 57 cars brimful of this commodity.

A NOISY RIDE THROUGH GRANADA

We crowded out of the station and climbed into the bus of one of the hotels upon the steep Alhambra hill, a bus drawn by four powerful, gaily-bedecked, long-eared mules, each with a string of sleigh-bells round his neck. The whip cracked and we were off, the only occupants of the bus aside from the driver and the so-called interpreter.

Granada's thoroughfares are paved and clean and there is a prosperous appearance about everything. Streets are crowded and there are many automobiles, mostly of American manufacture, and some fine new buildings, modern shops, all lending a Madrid-like atmosphere unfamiliar in most Andalusian towns.

But the pavement is of stone blocks and our bus was not rubber-tired. The noise was so terrific that we could hardly shout loud enough to be heard.

"*Hombre*," I yelled, "hasn't the hotel a motor car?"

"The ascent is so steep that it wouldn't serve," was the reply.

"What about rubber tires, then? This is awful. It will surely shake all our teeth out."

"It would take a new set of rubber tires every day, the ascent is so steep."

Well—patience—and soon we turned into a narrow street and started the ascent, which, sure enough, was very steep, though when nearly up to the top a very small, rusty-looking motor car passed us with no apparent trouble.

Although the main avenues are wide and modern, it is like entering another world to turn down one of the narrow streets and peep through doorways into lovely patios full of flowers, palms, and orange trees, all guarded by beautiful wrought-iron doors.

The trace of the Moors is so strong that one instinctively looks for long white robes and turbaned heads.

Here and there, in shops and out on the sidewalks, are girls making the justly-famed Granada lace. They stretch silk tulle on large frames and weave into it pretty designs, for small handkerchiefs, and much more elaborate motifs for tablecloths and curtains. We saw one immense piece, representing the fall of Granada, with all the detail of a painting of a battle scene. Their chief work is, of course, the manufacture of Spanish mantillas (see illustration, page 219).

Early next morning we started out to see the Alhambra. We took a guide, but found that the modern "son of the Alhambra" is a more commercialized individual and less smart in anecdotes than Washington Irving's "historiographer, Mateo." Instead of a bundle of rags, he was neatly dressed with a blue cap embroidered in gold, with prominent letters, "Intérprete Autorizado."

His name was Fernando and he proclaimed himself to be not only the most desirable guide to the Alhambra, but also of all Granada, its environs, and, in addition, an authorized *práctico* (mountain guide) for the ascent of the Sierra Nevada. In such expert hands we felt quite safe!

First we were escorted to the wonderful gardens of the Generalife, where the fountains were playing in the bright sunshine. Then down shady paths we were led to the old Moorish Gate of Justice, with its large horseshoe portal—the entrance to the Alhambra.

ENCHANTMENT BEHIND A SMALL, MEAN DOOR

One pays the uniformed guard one peseta as entrance fee to the palace and 50 céntimos for a "kodak fee," and is then shown to a small, mean door.

He enters, and lo! a veritable scene from the Arabian Nights! The Court of the Myrtles dazzles one's eyes in its quiet, though gay, beauty. Its long quadrangular pool of crystal-clear water, where 200 slave girls used to bath, is surrounded by a low, square-cut hedge of myrtles. The big, heavy tower of Comares (see page 214) in the background is reflected in the water as if it were a vast mirror, the effect being reminiscent of the Taj Mahal, though lacking the graceful minarets.

Around the court are delicate arches, walls, and balconies, in which the restless

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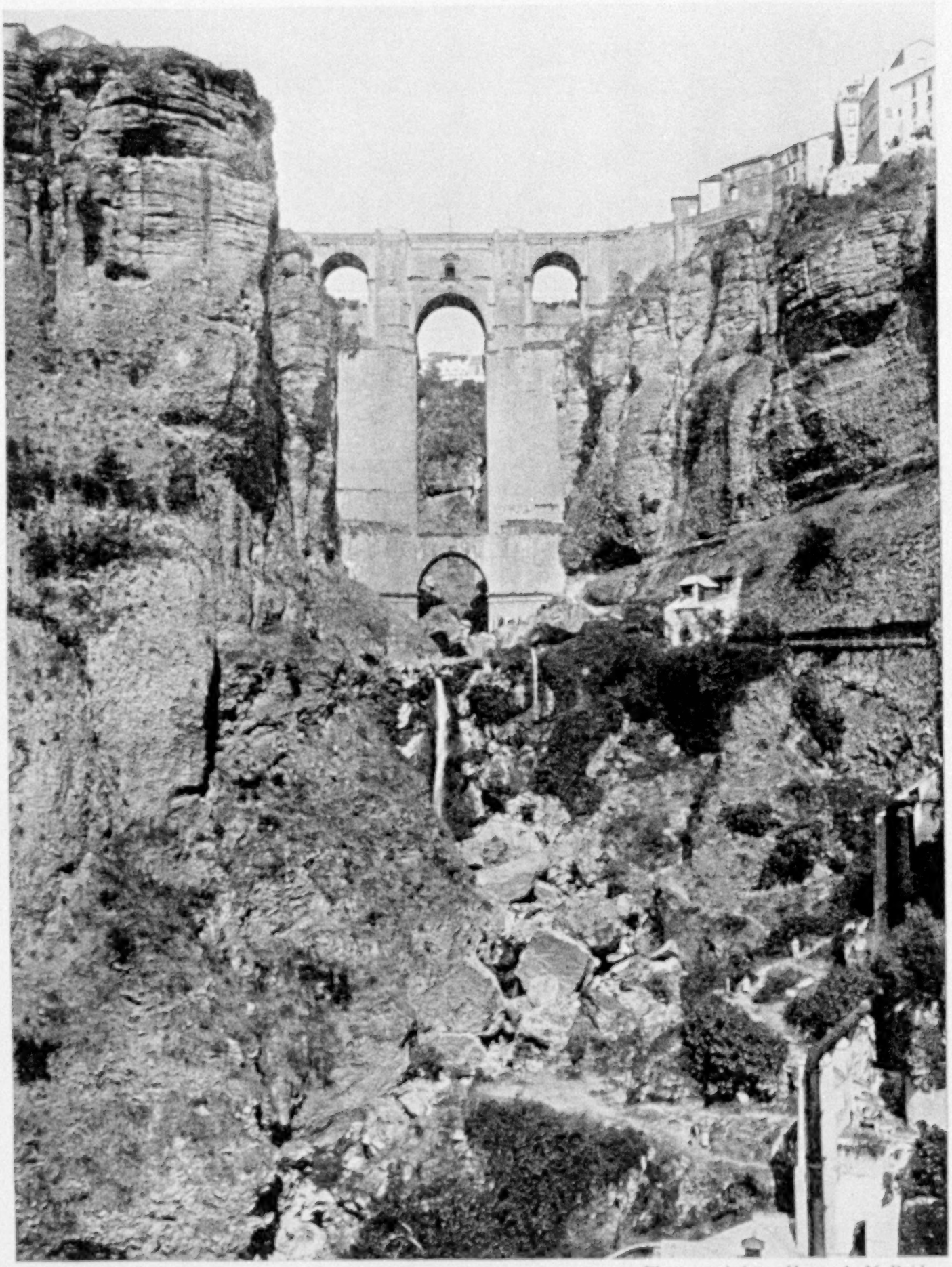

Photograph from Harry A. McBride

THE RIVER GORGE AT RONDA

The "New" Bridge spans the Tajo, or gorge, of the Guadalevin and unites the two parts of the town, which is built on both sides of the gorge. Flour mills cling to the precipitous sides of the cut, 530 feet deep, and utilize for power the little stream of water that runs through it in a series of boiling rapids.

fancy of the Moorish workman seems to have run riot in intricate arabesques, blending curious geometrical figures and simple foliage in an endless variety of designs in stone, plaster, marble, and wood.

In all this lacelike work of the ancient artificers, there is never a reproduction of a living creature, though there often occur quaint oriental inscriptions in Arabic, many of them proclaiming, "There is no conqueror but the Most High God."

From the Hall of the Ambassadors one obtains an idea of the massiveness of the walls of this venerable place, where the window recesses are so deep as themselves to form small rooms. These windows afford an entrancing view far down upon the housetops of Granada, the old Albaicín quarter, and the valley of the Darro.

A CHERISHED FABLE DESTROYED

In the Hall of the Abencerrages our guide showed us the little fountain beside which 36 members of this strong Moorish family were beheaded.

"What about that story that bloodstains may still be seen in the marble?" we asked him.

"That's only a *mentira* (lie), señor, that an old guide told to Vashington," he replied, using the familiar name always given to Irving in Granada, where his works, translated into Spanish, are known most intimately. Nevertheless, he bent down and swept aside the sand at the bottom of the fountain, and there, sure enough, the white marble bore reddish stains.

"That's only because the water contains iron," Fernando explained, thus completely destroying a cherished fable.

But he was a good guide, because he had already, at the Generalife, shown us a large acacia tree growing from the center of a large cypress. And every time we turned a corner he would say:

"Now this is the place to take a picture. Everybody takes one just here. I'll take one of the two of you; I know how to operate every kind of *aparato fotográfico*."

We went through the tiny little garden of Irving's imaginary Moorish beauty, Lindaraja, and down into the ancient baths. First, there is a tiny one in stone and marble for the children of the sultan; then a larger one for the sultana, and lastly a huge one, almost a swimming tank, for the sultan himself, with three faucets—hot, cold, and one for perfume!

In an adjoining room, one rested after the bath, reclining on a silk-covered divan, and there is a latticed balcony just above this part of the baths. Fernando explained how a musician always sat in the balcony and played sweet music while the bathers rested, and then he hastily added:

"But, of course, the musician was blind, for the sultana bathed there, too."

After we had seen the exquisitely graceful Court of the Lions (see page 215), the guide took us through corridors into a patio piled high with bricks and mortar, which is now being reconstructed, and where there has been discovered what is believed to be the original entrance to the palace proper.

One side of the doorway has been uncovered and shows a long slab of marble extending from top to bottom, about two feet wide and three inches thick. The weight of the arch has been resting on the top of this slab so long that an extraordinary thing has happened. The marble has not broken, but appears actually to have bent outward two or three inches. This greatly puzzles the workmen, guards, and visitors.

A guard said, "This seems inexplicable to us, señor. How could this huge slab bend and not break? None of us could find the answer. But, ah, these Granada *gitanos* (Gypsies), they are the smart ones! I asked an old gitano who was here one day: 'Why did that stone bend that way?' I thought the question would faze him, but not at all. He answered like a flash: 'Because, hombre, they cut it green!'"

THE GYPSY FOLK OF GRANADA

There are hundreds, and perhaps thousands, of these strange Gypsy folk in and around Granada. Just outside the town there is a large settlement living in caves dug in the mountain side and presided over by a "king." The women, rose in hair and with tambourine and castanets, dress in gaily-colored calicoes (see page 220).

The unwary tourist is lured thither to

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AN ORANGE-LADEN DONKEY IN SOUTHERN SPAIN

The value of its orange crop is four times that of any other fruit crop of Spain. The picking season is between October and March.

see them dance, and then made to pay the equivalent of $10 for the pleasure.

The dance is unique, but so is the admission fee, and we were able to escape without witnessing the spectacle, not, however, without difficulties, because, I regret to relate, our faithful Fernando was somehow overly anxious that we should not miss such a wonderful sight. I suppose he works on a 10 per cent basis.

RONDA, IN A VAST AMPHITHEATER

From Granada we must retrace our footsteps, and soon we are again at Bobadilla, having luncheon and changing trains. In a few hours we arrive at Ronda, a little Spanish country town situated in the middle of one of the most magnificent amphitheaters of mountains to be seen anywhere in the world.

The floor of this amphitheater is a perfectly flat plain, upon one side of which rises an almost perpendicular precipice, cut sharply in two, as if by a giant ax, and forming a chasm 530 feet deep. The town is built on both sides of this gorge (see pages 224 and 226).

Ronda was once famous for its bold *contrabandistas* and horse-trainers, but to-day little remains to suggest the fact—a few shops where gay trappings for horses and donkeys are made.

We were in a dry-goods store here one morning, buying some cloth, when a farmer entered, greeted the clerk who was waiting on us, and swung up on the counter two live and very plump chickens tied by the legs. We were immediately forgotten. The clerk and the farmer went to their bargaining with mouths, eyes, arms, and fingers.

After five minutes of rapid gunfire, the clerk evidently triumphed. He paid the farmer, flung the chickens under the counter, and returned smilingly to show us more cloth.

Over the deep gorge called the Tajo, there are three bridges, at different elevations—one Roman, one Moorish, and the Spanish *Puente Nuevo*.

We went down the rough stone pavement to see the *Mina*, a mysterious underground staircase of 365 steps, hewn out by Moors, and descending to the river, to avoid danger of lack of water in case of siege.

Ronda, because of its lofty situation, enjoys a fresh climate and is a favorite center for tourists. Its sights are soon seen, though one may linger long to marvel over the wonders Nature has wrought in this unique spot.

NECESSITY DEMANDS OCCASIONAL VISITS TO "GIB"

To Anglo-Saxons residing in southern Spain, occasional visits to "Gib," as Gibraltar is called, are almost necessities. There one may lay in supplies of English and American cigarettes, magazines, books, bacon, tea, and other things which become luxuries, once one leaves the beaten track (see illustrations, pages 154-157).

From Málaga there is the train via, of course, Bobadilla, and there is also an autobus daily, which makes the trip in five hours as compared with twelve by rail. The road has much to offer in picturesqueness, for it winds along the sea and through many small villages.

The bus gives good service, but we were unfortunate.

To cross the Rio Guadiaro a ferry has been rigged up, big enough to carry the bus. Our chauffeur, however, instead of driving the bus onto the ferry, drove it into the river, where it stuck, carburetor flooded and hub-deep in mud and rocks. We ourselves got across on the ferry with our suitcases.

There was no telephone for miles around. The chauffeur, though aided by farmers with two pairs of oxen, was unable to haul the automobile back to dry land (see page 231).

A mile from the river is a forlorn little village, where, after great difficulty, we persuaded a resident to furnish the party with three horses, and a mule for the baggage. We mounted and were off, over rough paths and down deep gullies, for we were taking advantage of short cuts.

ROMANCE AND SMUGGLING STILL HOLD SWAY

As it grew dark, we entered solitary forests of cork oaks, miniature in stature and gnarled and seared where the bark had been cut away for cork making (see page 161). A lone eagle soared over a near-by pile of rocks.

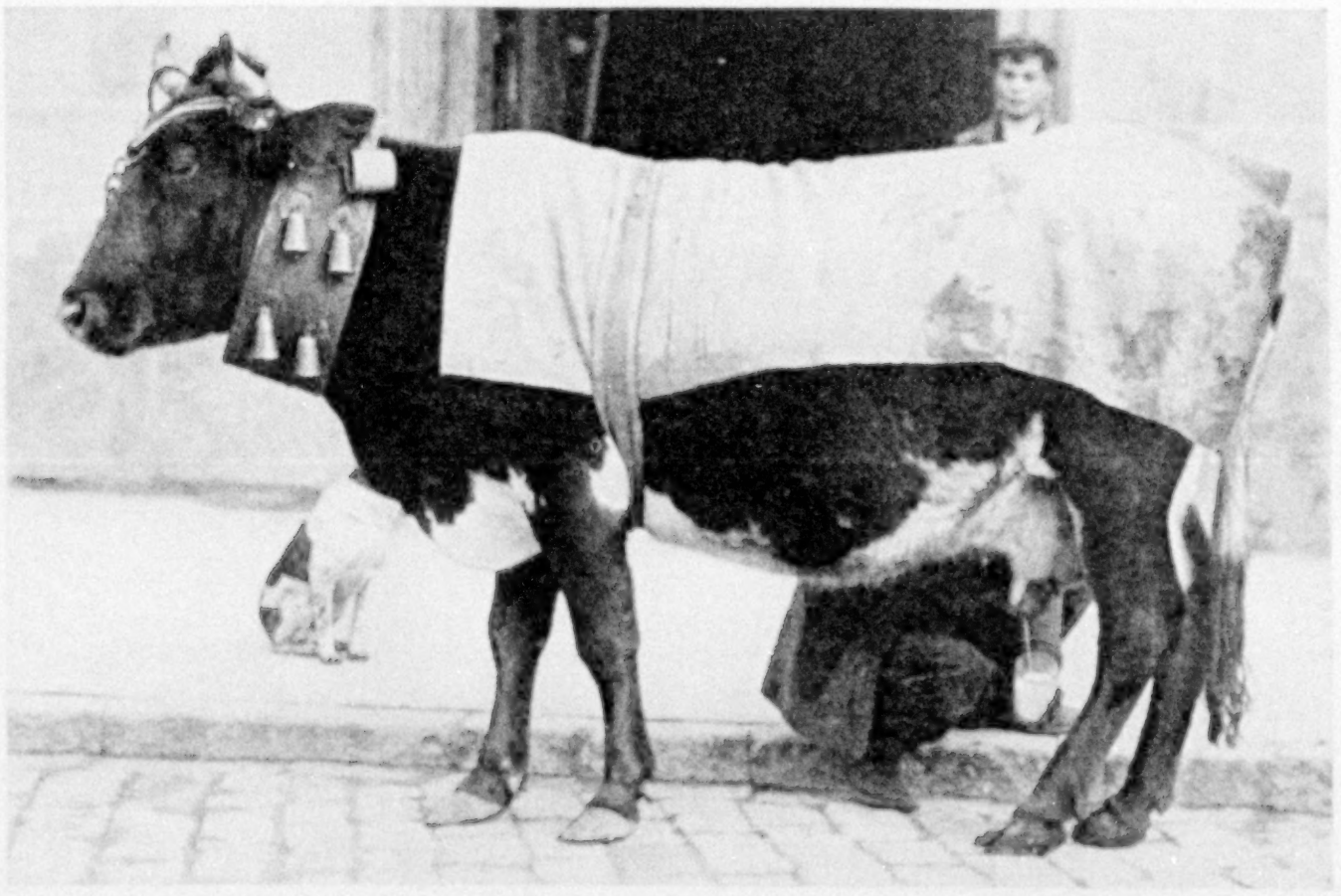
Then the owner of our steeds, who accompanied us and who said he was a farmer, pointed out a big stone near the pathway. He told us how only the week before a horse had been shot from under him by the *carabineros* right at that spot, and how he himself had been nearly "taken." His fastest horse, too.

But that was nothing compared with two years previously, when he lost another and was himself shot in the leg and entirely "taken" with 50 pounds of contraband tobacco from Gibraltar. He was in jail 18 months for that. Nevertheless, it appeared that he generally got through safely and, of course, the profit was very good, especially in silk and tobacco.

So at first hand we found that romance and contrabandistas still exist in their old stronghold. After two hours we rode into San Roque (see page 179), paid off our exquisitely polite and interesting "farmer," hired a motor car, and arrived at our Gibraltar hotel very tired and stiff.

Due to the educational advantage of American advertising, the Rock of Gibraltar is familiar to all Americans. Those who see it from the sea have difficulty, however, in making their mental picture coincide with reality.

The well-known view of that mighty point of bald gray rock of limestone, jutting up almost perpendicularly to a height of 1,400 feet, is from the land



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SUPPLY COMES TO CONSUMER IN SEVILLE

In the heat of summer the metropolis of Andalusia is known as the "frying pan of Europe," but its perfumes, sunshine, gaiety, and cool patios have made such an appeal to foreigners as to give rise to the saying, "God gives His favorites a house in Seville." The discovery of America gave Seville undreamt-of importance. Columbus, on his return from his first voyage, was given a formal reception here. The city was invested with the monopoly of the trans-Atlantic trade, was made the seat of the *Tribunal de las Indias*, and soon became the chief port of Spain (see also page 200).

side (see page 157); and the Yankee tourist is rather surprised, on landing, to find quite a city on the rocky slopes, the houses built of the same gray-tinted stone as the Rock itself. To get anywhere, aside from the one long Main Street, one must go either up or down steps (see page 156).

After Spain, the tall, straight policemen, dressed exactly after the fashion of London "bobbies," are a welcome sight. One directed us to the American consulate. "Up the Street of the Forty Steps, sir," he said.

The slopes above the town are overgrown with cactus and harbor a considerable number of Barbary apes, the only wild monkeys found in Europe.

Scientists explain that they came across in prehistoric days, when the Mediterranean was only a lake and the Strait dry land. But Gibraltarians have another explanation. When the forces were building galleries in the Rock for mounting cannon, they discovered a rough well, which goes down to untold depths inside the Rock. They say it connects at the bottom with a natural tunnel under the Strait to Africa, and that the monkeys are the only living things that know the way through it. Years ago two engineers went down the well to explore and have never since been heard of.

GIBRALTAR'S COSMOPOLITAN THRONG

The Rock is united with Spain by a low, flat plain only half a mile wide, the central portion of which is known as Neutral Ground, between the British possession and Spain. Gibraltar, which comes from Jebel Tarik (Hill of Tarik) of the Moors, was in antiquity called Calpe. On the African shore opposite was the promontory Abyla, now the Sierra Bullones, and these two were named the "Pillars of Hercules" (see page 159).

Photograph from Harry A. McBride

BULLOCK POWER TO THE RESCUE

The chauffeur of the daily motor bus from Málaga to Gibraltar failed to drive onto the ferry over the Guadiaro and went instead into the river. Even six strong oxen were unable to effect a rescue (see text, page 229).

One of the various explanations of our dollar sign is that it represents the Pillars of Hercules, united by a scroll with the inscription "Non Plus Ultra."

Rarely is such a cosmopolitan throng to be seen as in Gibraltar's Main Street, which winds gradually up from the landing place—Moors from Tangier, British "tommies," American sailors, Indian merchants, Syrians, blacks, an occasional Oriental, and always some tourists from vessels in port.

Upon looking up over the town at this mass of gaunt stone, one sees where it is honeycombed with mysterious galleries and tunnels for military purposes. Big gray warships lie in port with steam up, at every step one sees soldiers, and is reminded that this is a mighty fortress guarding the gates of the Mediterranean.

THE STERN FATE OF A SUICIDE

It was in 1704 that a British fleet under Admiral Rooke surprised the weak Span-

ish garrison. There followed many attempts to wrest it from British hands, the last great siege extending from 1779 to 1783.

An idea of what a grim old stronghold Gibraltar was in those days and what stern disciplinarians ruled over it is gathered from the orders which appear in the old records. Some of them are amusing:

"Any donkeys loose in the town are the property of the person taking them away, and any straying in the ramparts are to be shot by the sentries.

"All masons whatever are to be employed on the King's works and on no other; if they are found to have been employed on private work after this order, Lord Tyrawley will have every foot of the work done pulled down.

"No soldiers to play at fives from 1st June to last day of September.

"No billiards to be played after second gunfire. If any keeper of a billiard table disobeys this order, his table shall be broken to pieces and burned on the public parade.

"No officer or soldier for duty is to carry an umbrella.

"A man of the . . . Regiment, having been so wicked and cowardly as to hang himself, in order to put all the disgrace possible upon such heinous action, the C. O. is ordered to treat the corpse with utmost ignominy. No funeral service is to be performed; the body is to be hung up by the heels for a certain time and afterwards thrown over the Lime Wall, like a dog or a cat.

"Fishermen are only to sell their fish after the servant of the Governor has bought what he requires.

"On account of the scarcity of flour, soldiers are not to have their hair powdered until further orders.

"No woman is to beat a soldier—the first that does shall be whipped and turned out of town."

Little steamers run across the quiet, blue bay to the Spanish town of Algeciras (see page 157).

Gibraltar is the center of excursions across the Strait to Tangier. Tangier, of course, is entirely oriental—narrow, roughly paved, its dirty streets crowded with noisy throngs of Moors and Berber blacks, all as busy as a swarm of bees.

The Moorish houses are one-storied, overtopped here and there by graceful minarets, and present to the street a bare and windowless wall. It reminds one of stories of Bagdad.

But Tangier is not in southern Spain. It is a totally different atmosphere, a different continent. Tangier is another story.

Notice of change of address of your GEOGRAPHIC MAGAZINE *should be received in the office of the National Geographic Society by the first of the month to affect the following month's issue. For instance, if you desire the address changed for your September number, the Society should be notified of your new address not later than August first.*

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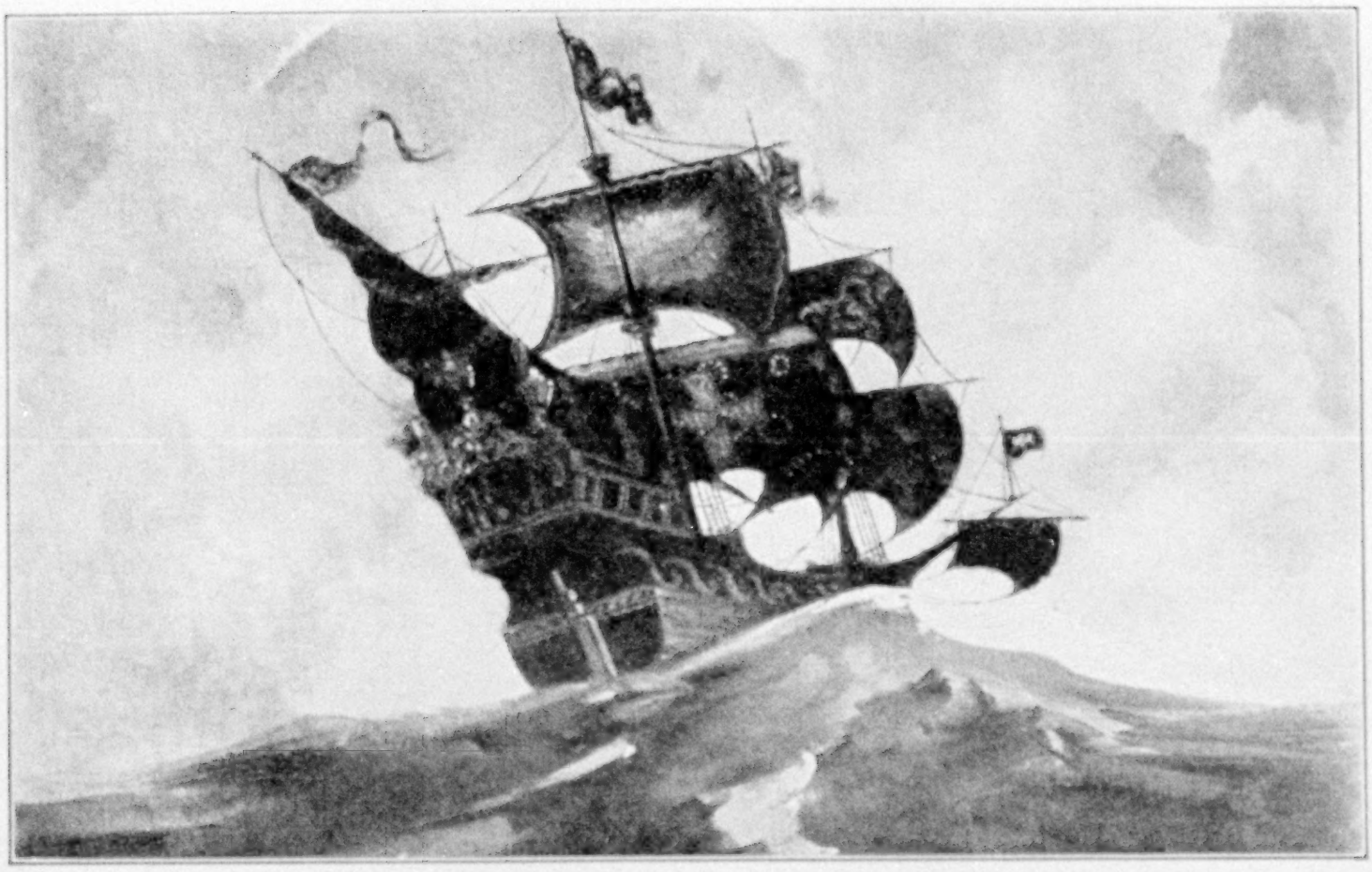

The Spirit of Pioneering

Impatience with present facilities, a restless searching for perfect things—these have driven men to discovery and invention. They possessed the early voyagers who turned their backs on the security of home to test opportunity in an unknown land. They explain the march westward that resulted in this settled, united country. And they have inspired the activities of the Bell System since the invention of the telephone.

The history of the Bell System records impatience with anything less than the best known way of doing a job. It records a steady and continuous search to find an even better way. In every department of telephone activity improvement has been the goal—new methods of construction and operation, refinements in equipment, discoveries in science that might aid in advancing the telephone art. Always the road has been kept open for an unhampered and economic development of the telephone.

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Thus has the Bell System set its own high standards of service. By to-day's striving it is still seeking to make possible the greater service of to-morrow.

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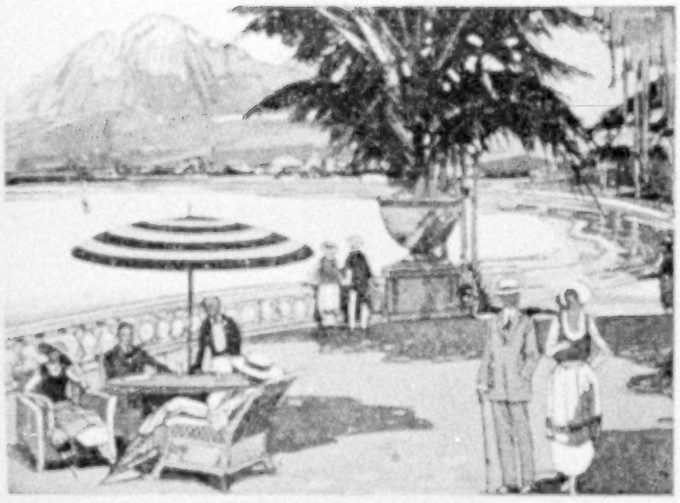

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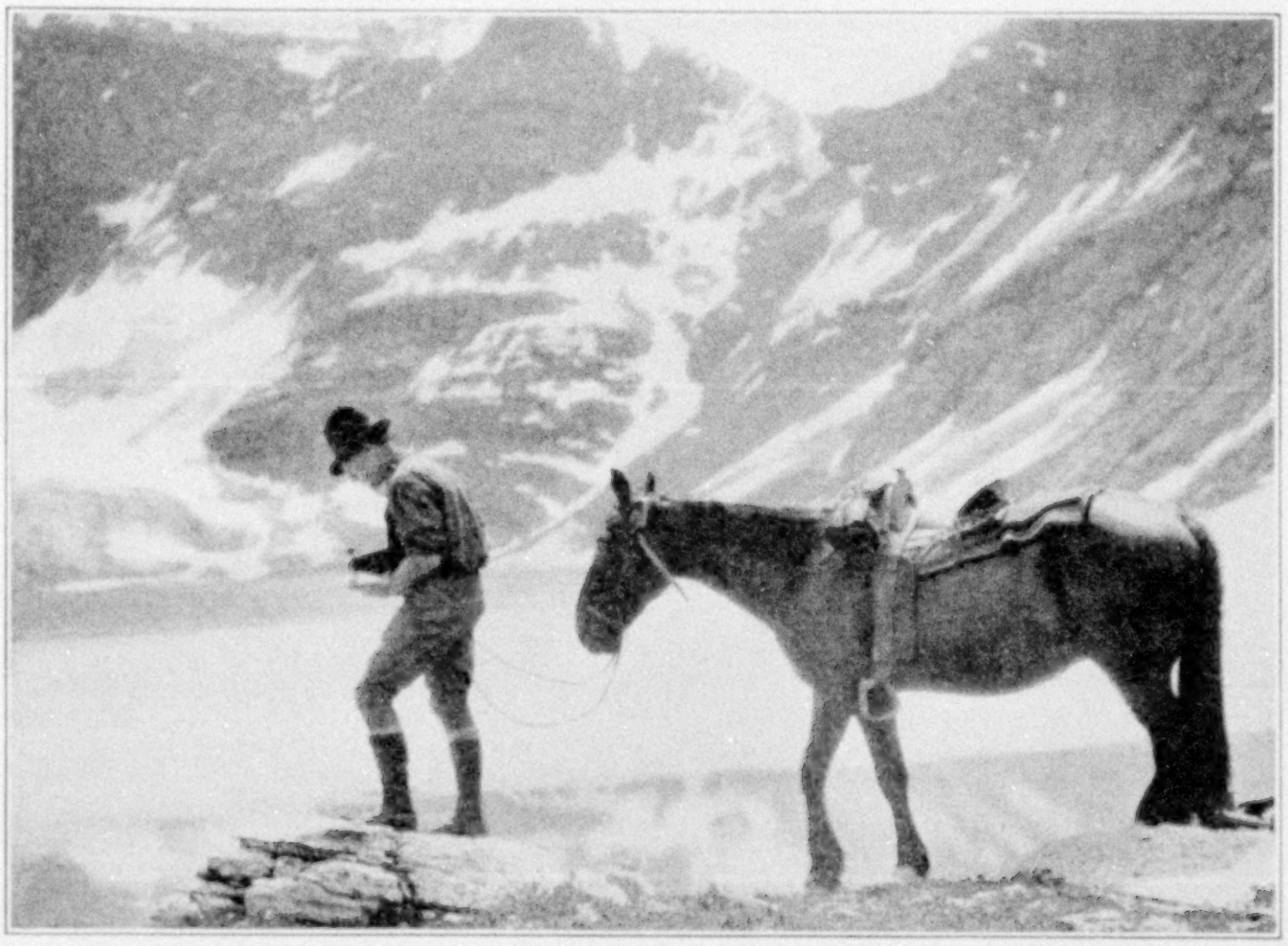

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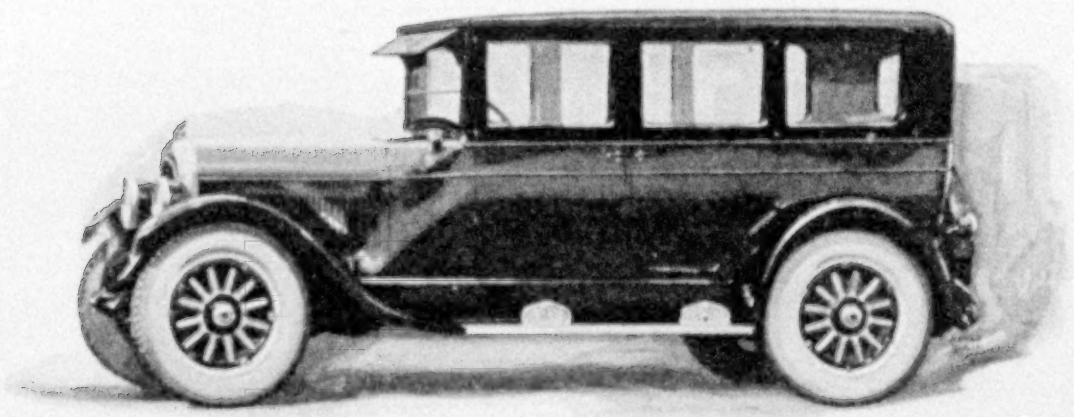

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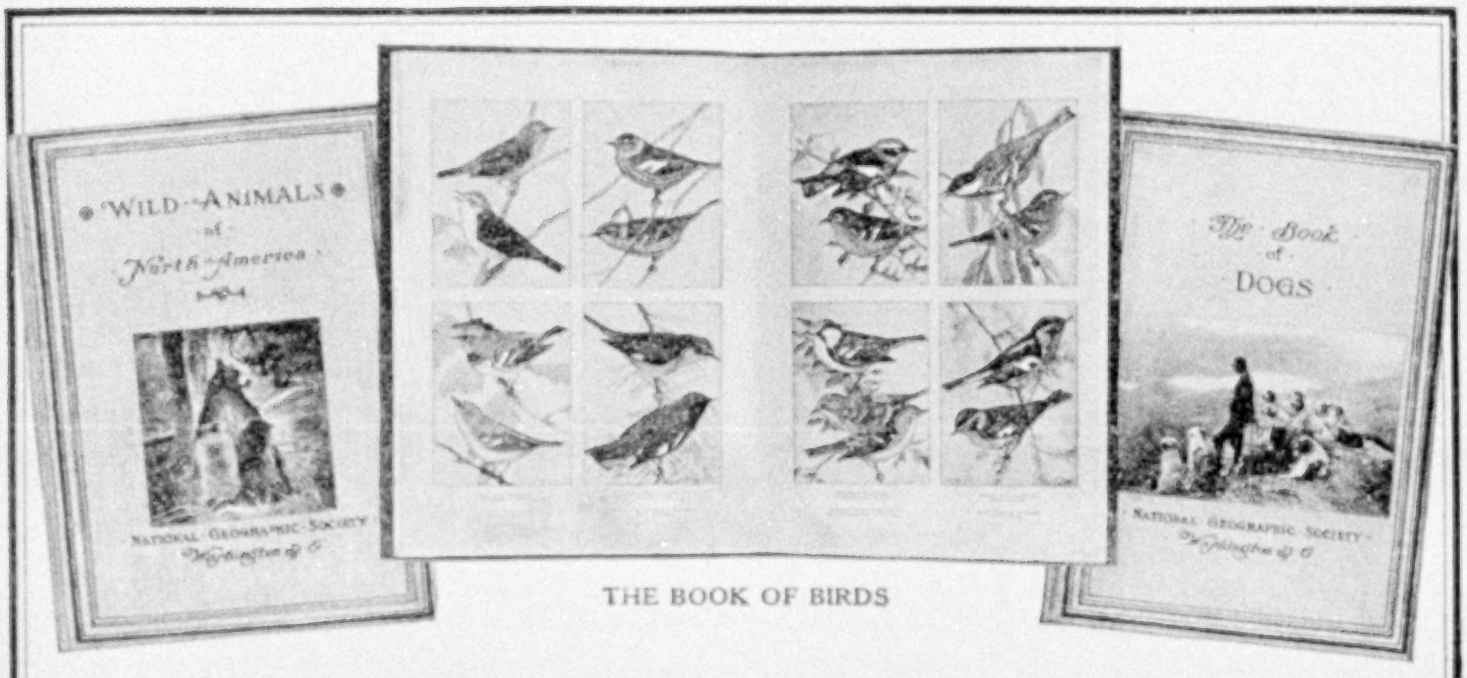

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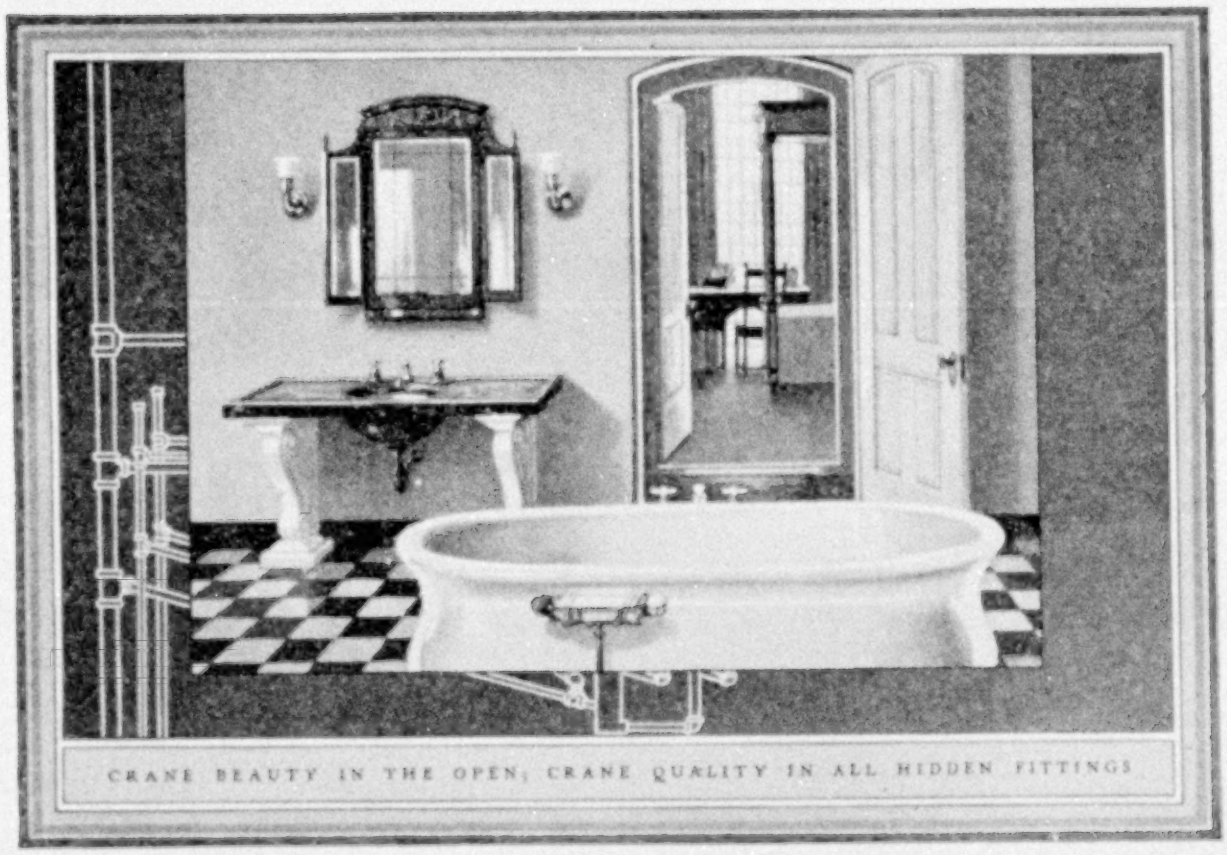

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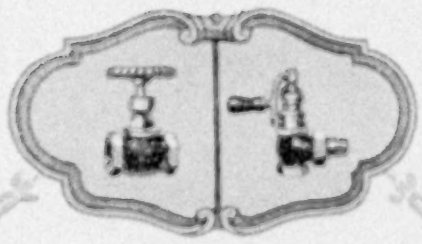

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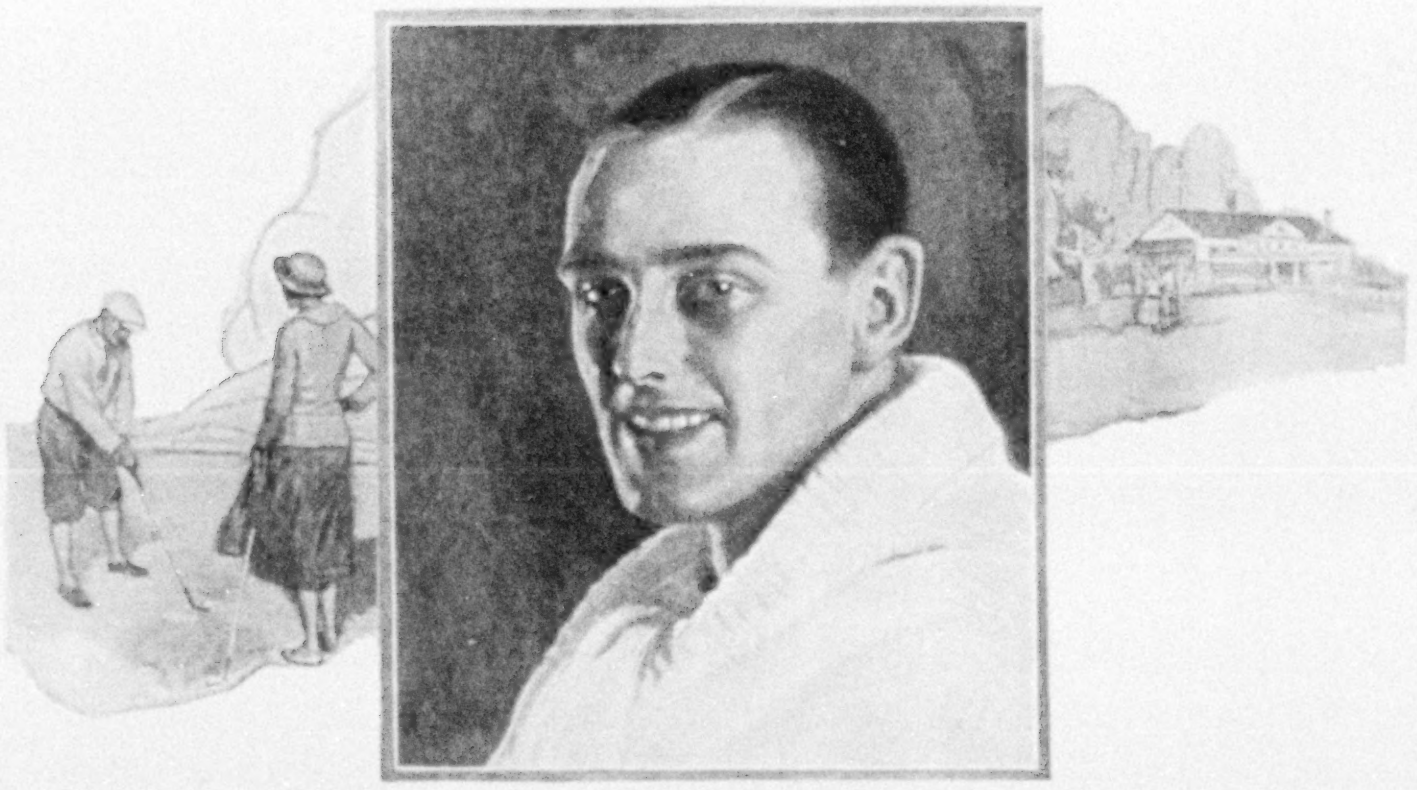

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Your teeth get no vacation

So guard them by the "Wash—Don't Scour" method

It's the same old grind, grind, grind, every day in the year, so far as your teeth are concerned. You may rest or play at the lakes, the woods or the shore, but your teeth must keep right on doing their daily work—and doing it well.

Modern Dental science proves that good teeth mean good health—that care of your teeth is an investment that pays lifelong dividends both in beauty and in health.

But use a safe, common sense dentifrice

Colgate's Ribbon Dental Cream, because it contains no grit, "washes" teeth and polishes them gently and safely—keeps them thoroughly clean. It brings out all the natural beauty of tooth enamel without the slightest danger of scratching it, or wearing it away.

Colgate's is a common sense dentifrice, based on soap and precipitated chalk—the two substances which authorities approve. No "cure-all" claims* are made for Colgate's. Its only function is to keep teeth clean. A Dentist, not a dentifrice, corrects and cures unhealthy mouth conditions.

*In the book "Good Teeth" (Keep Well Series No. 13) on page 14, the United States Public Health Service says, ... "No medicine has ever been suggested which will cure pyorrhea, and the sooner this fact is recognized by both dentist and patient the better for all concerned."

A large tube costs only 25c—for Colgate's is priced as sensibly as it is manufactured

COLGATE & CO.
Established 1806

COLGATE & CO.
Dept. 561, 199 Fulton St.
New York City

Please send me, free, a trial size of Ribbon Dental Cream.

Name

Address

Truth in advertising implies honesty in manufacture